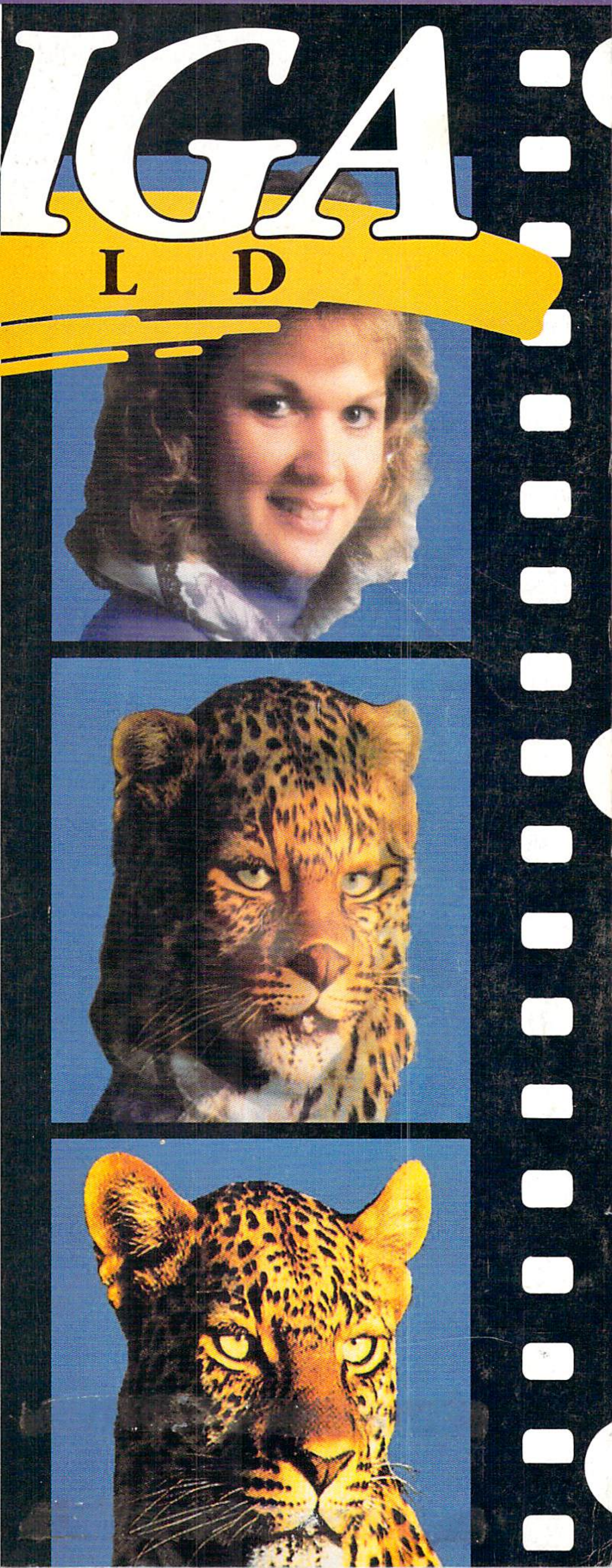


SNEAK PREVIEW! The All-New A600 – p.44

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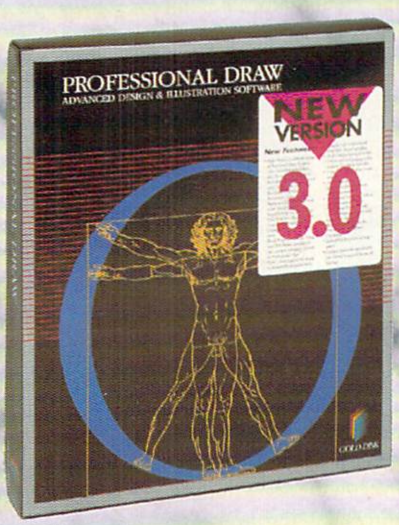
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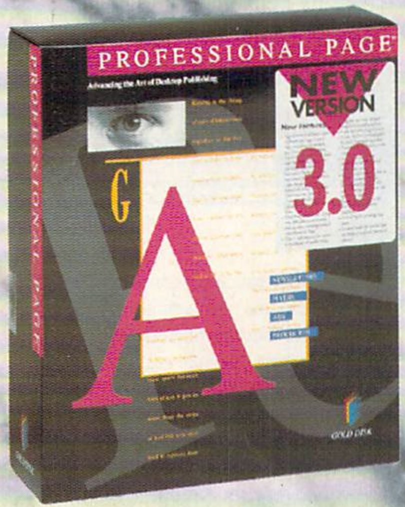
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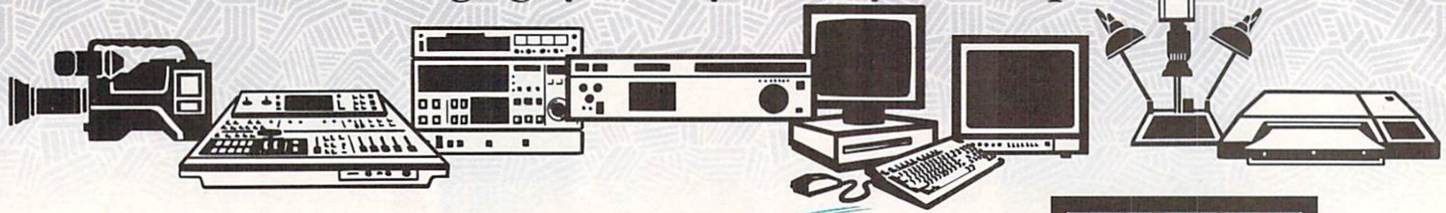
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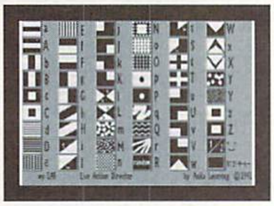
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Graphic Courtesy of Nickelodeon

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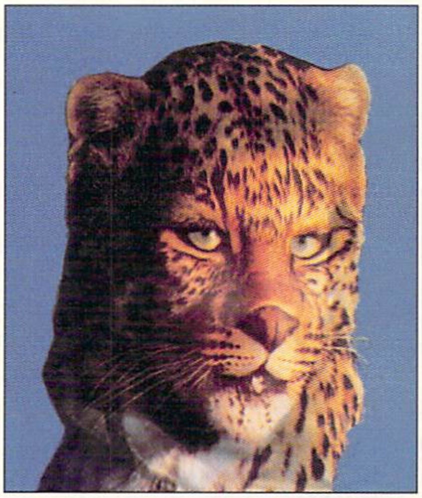
VOLUME 8, NUMBER 10, OCTOBER 1992

FEATURES

ARTICLES

COLUMNS

DEPARTMENTS



An intermediate stage in the morph of a woman into a leopard. See the cover story, "Morphing Madness," on p. 26.

REVIEWS

GAMES

COVER IMAGES BY MARK THOMPSON, RADIANT IMAGE PRODUCTIONS.
MORPHING DONE WITH ASDG'S MORPH PLUS.

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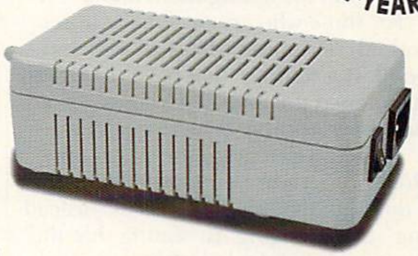
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CHIEF CONCERNS

Mr. Robinson should learn to qualify his bald statements with "It is my opinion . . ."

A ROAR BEGAN almost immediately after the article ran in the July 12th edition of the *San Jose Mercury News*, a prestigious Silicon Valley newspaper. It seems that the usually dull computer columnist Phillip Robinson took it upon himself to declare the Amiga a dead machine.

In fact, the first sentence of the column reads "The Amiga is dead." This gave West Coast Amiga users conniptions, and sent them raving to their keyboards, where they really let it fly on-line.

The syndicated column has since run in newspapers across the country, prompting a flood of calls to *AmigaWorld* asking if Commodore had pulled the plug on the Amiga. The answer is a resounding Not!

Columnists have an obligation to express opinions honestly, and Mr. Robinson had every right given to us in this great nation to write that column. The best columns are a bit pointed, and those that provoke are particularly valuable because they make us think.

If Robinson wanted us to think, he succeeded. He apparently received more responses from this column than from any he has written in the past eight years. I guess all those people with dead machines just wanted to thank him for letting them know.

For those who are personally upset with Mr. Robinson, that's all well and good. But to those that have reportedly threatened the man, you'd best get a healthier attitude, or perhaps a life.

While I'll defend to the death Mr. Robinson's right to publish his opinion, I do think that his column was misleading and damaging. By stating that the Amiga is dead, he led many to believe that the computer was no longer being produced, sold, marketed, or supported. We received many phone calls from people worried that the Amiga had been yanked.

The problem is that Robinson did seem to state as fact what was merely opinion. It was this lack of care that got me steamed.

Shortly after the article appeared, I got a call from a guy named Roy. Roy was pretty upset. The company he works for uses Amigas, and the Big Cheese was giving Roy a big beef over buying a new A3000. Roy's boss had read the article and apparently believed it. It takes a lot of convincing to turn these beliefs around.

Commodore Hot

Commodore also felt the heat from Robinson's blasts, and that, I'd say, is a good thing. The firm cranked out a three-page reply outlining its arguments, and posted it on the nets.

The guys from the big C pointed out that we are up to about three million machines installed worldwide, that new machines are on the way (beyond the 600), that there are about 1000 Amiga dealers in the US, and that Digital Equipment Corp. is an Amiga reseller. They then described the firm's marketing efforts. Commodore has also begun reaching out to computer journalists, including Robinson, to explain the key markets for the Amiga. They pointed out that Amiga fans are more than welcome to contact Mr. Robinson, or write to newspapers that have run the column. Many already have.

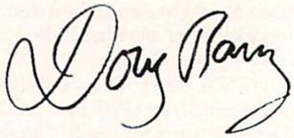
One of the more eloquent responses was a letter published in the Boston Globe from Mary Ryan, a director of the Boston Computer Society. After the Globe ran the column, Ryan was besieged with calls asking if Commodore was pulling the Amiga. She tactfully disagreed with the column and gave many examples of the Amiga's use in prominent places, including Fenway Park (home of the almost always almost great Boston Red Sox), the Holiday Inn, and just about every cable station known to mankind.

Bottom Line

If you've read the column, you know that Robinson knows a lot about the Amiga. He mentions our GUI, multitasking, custom chips, color graphics, stereo sound, and video compatibility. What he failed to realize is that those capabilities have yet to be matched.

What he and countless others also do not understand is that the Amiga is a vertical-market machine. It no longer competes with PCs and Macs, but instead takes on workstations from Silicon Graphics, NeXT, and Sun.

Calling the Amiga dead is like calling the Ferrari dead just because it's outsold in sheer numbers by Yugo. They are different machines, and need to be judged in different ways. Would Robinson have us all drive Yugos?



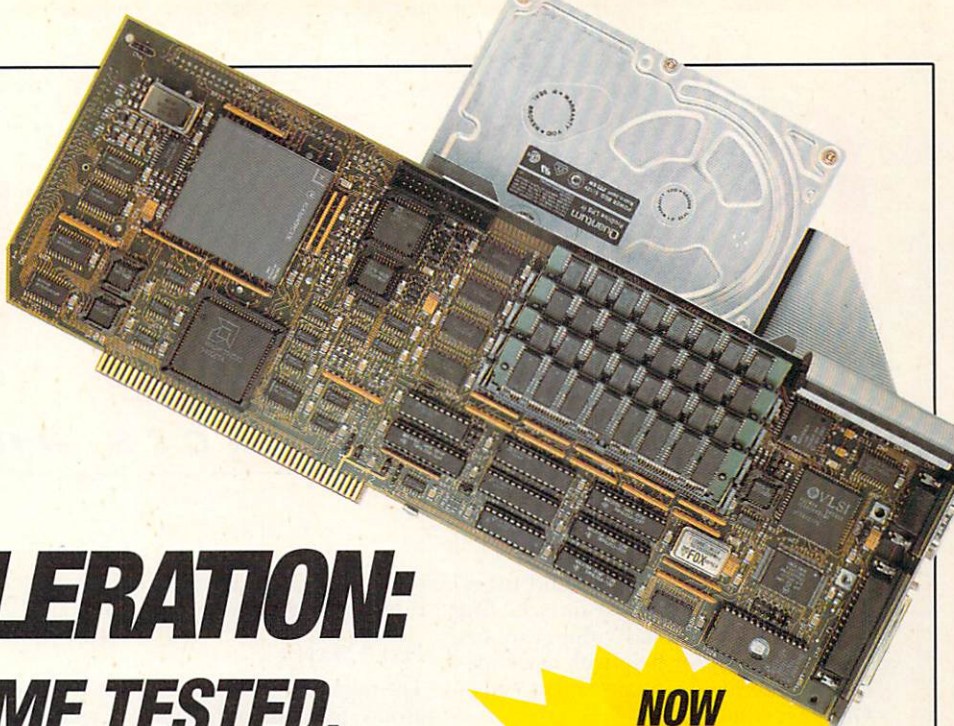
Brouhaha Update

Right before our presstime, Robinson issued a follow-up piece in which he apologized for his "Amiga is dead" statement. His column brought him the largest response of any column he's ever written. He defended his original conclusions, however, that the Amiga is a goner as far as competing against the Mac or PC, *except* in desktop video and multimedia.

And Amiga owners did respond—with a vengeance. The reaction, according to Robinson, was mixed. "Many are unhappy with Commodore...many are unhappy with me."

Welcome to the neighborhood, Phil.

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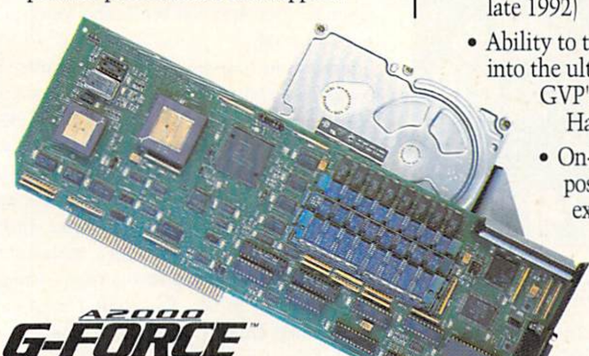
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OVERSCAN

News, New Products and Networks

Video Sources

Scores of Amiga owners find users' groups a tremendous resource. But where do professional videographers and artists turn for help with their specific requirements? To the Amiga Video-Graphics Guild (AVG).

Although AVG had its start in a special-interest meeting of California's San Fernando Valley Users' Group, the guild has evolved into a different animal. "We are professionals helping professionals," states Geoffrey Williams, guild director. "We are definitely oriented to video and graphics. That's all we do. Almost everyone in the group is a working professional or wants to be. We help make the transition from amateur to professional. We help make contacts."

With the guild's assistance, many members have found work with software developers and video producers. AVG's member-referral service keeps resumés on file and matches members with employers.

According to Assistant Director Steven Blaize, AVG is a boon for would-be developers—especially those with little initial capital who depend on word of mouth.

Help Mates

The organization's quarterly publication, *Mentor*, features product reviews, tutorials, advice, and news, and it includes a disk packed with images and tools. In addition, members can ask questions and get timely answers through several forums. This summer, AVG launched an open-forum BBS that provides help in specific categories. One section, for example, focuses on Imagine. The BBS has been so successful that the guild now needs someone to donate a gigabyte drive to contain the member-provided data.

Other benefits include monthly hot-news sheets, disk and video libraries, a help hot-line, a national outreach network, and more. Local members and the public can take advantage of monthly meetings that feature presentations by such Amiga notables as Brad Schenck, Rick Probst and Joe Conti. According to Williams, guild membership is split equally between locals and professionals elsewhere in the country.

You Deserve a Promotion!

AVG actively promotes the Amiga by supporting the artists and programmers. Further, members take the machine into classrooms, sponsoring seminars for faculty members. AVG managed to gain the Amiga's admittance to the University of California/Santa Barbara, California Institute of the Arts, and the Brooks Institute.

"The Amiga is absolutely the best platform for video. We look at new technology to find the best way to get the work done," said Williams. The Amiga's desktop-video ability is, "a strong niche, growing all the time," he explained. And guild members plan to continue capitalizing on it. If you are interested in joining, contact the AVG at 1833 Verdugo Vista Dr., Glendale, CA 91208, 818/240-9845. Or, tap into the BBS at 818/240-4873.

—Jan Jackson

To the Letter

Kara Computer Graphics' new **font sets** ($99 each) comprise antialiased 16-million color ChromaFonts for use with NewTek's Video Toaster CG. The packages were designed to address current limitations of the Toaster in dealing with ChromaFonts. The included installation program lets you install the fonts on your hard drive and use them in compressed mode to save up to 50% of the usual storage space.

Toaster Fonts 3, a six-disk set, offers four distinctive cap styles in two sizes each (see photo), with outline, drop, and cast shadows. Each includes the full character set, plus special characters. **Toaster Fonts 4** (five disks) provides four shiny script and cursive faces: a chiseled Roman script in gold and metal, a casual Brushed script, and a Calligraphic face. Each style comes in two sizes and includes the full set of upper- and lowercase letters, numerals, and special characters. (RS# 124.)



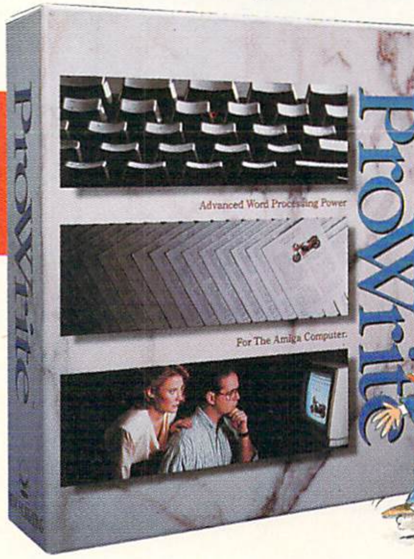
Toaster Fonts 3 assures capital gain.

Pop Arts promises Video Toaster users a treat with three **3-D font volumes** as well as a collection of **textures** ($39.95 each) for use with both the original and 2.0 versions of LightWave 3D. Each font set contains upper- and lowercase characters, along with numbers and symbols. Do you want the whole spread? If you buy three volumes, Pop Arts will throw the fourth in for free. (RS# 125.)

Integrated Graphic Media, maker of several existing NewTek fonts, now offers four packages ($89.95 each) on its own. **Foreign 1** includes all the characters necessary to represent the Albanian, French, German, Hawaiian, Italian, Portuguese, Spanish, and Swedish alphabets in their entirety. Your choices don't end with languages, however; you also get a choice of type styles (Foreign Thin and Foreign News) and five sizes (from 24 to 54). The **Serif 1** package includes Benji, Quadra, and Italian faces in normal and bold styles and sizes 14 to 54. Integrated's **Decorative 1** package gives you a quintet of styles in as many sizes, and the **Flags 1** collection includes full-color flags from 170 nations, in sizes 36 and 72. (RS# 126.) ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 98.

ProWrite® 3.3
The Best Just Keeps Getting Better





ProWrite is the best selling word processor for the Amiga®, and for good reason. High performance. Ease-of-use. Constant updates and enhancements. And now a new low price!

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ProWrite 3.3 gives you more power than ever before. More powerful graphic handling, including automatic text-wrap. Print preview. Password protection for your documents. The ability to name and find pictures in long documents. Full clipboard support, for seamless exchange of text and pictures with other programs. And HotLinks »™ support, giving you total integration of ProWrite with other HotLinks-capable programs!

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Combine this with ProWrite's already formidable feature set, and you have the most powerful word processor for the Amiga. Features like multiple fonts and pictures. A spelling checker with over 100,000 dictionary words. A thesaurus with over 300,000 cross-references. Outline font support. Jaggie-free printing, for high-quality printing on dot-matrix printers. PostScript printing. Macros and AREXX support for power users. Mail merge, for form letters. And multiple columns, including side-by-side columns for writing audio/video scripts—a ProWrite exclusive! And the list goes on!

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Even with all this power, ProWrite is more affordable than ever before—because ProWrite is available now for only $99.95! So you no longer have a reason not to treat yourself to the best!

See for yourself what makes ProWrite the most popular word processor for the Amiga. Visit your local Amiga dealer and put the power of ProWrite to work for you today!



Features

- "What you see is what you get" display.
- Multiple fonts, sizes, styles, and colors.
- Outline font support.
- Insert IFF and HAM pictures in your documents.
  - Automatically wrap text around pictures.
  - Multiple columns, with snaking or side-by-side text flow.
- Spelling checker with 100,000 word dictionary.
- Thesaurus with 300,000 cross-references.
- Full system clipboard support.
- HotLinksTM support.
- Undo and Redo command.
- Mail merge.
- AREXX port.
- Macros, when used with AREXX.
- Name and search for pictures in a document.
- Speaking capability, to read back document contents.
- Separate odd and even page headers and footers.
- Paragraph sorting.
- Automatic page numbering, with five different page number styles.
- Insert current date and time, with five different date formats and two time formats.
- Word count and readability level calculation.
- Up to 10 documents open at the same time.
- Document password protection.
- User-set document comments.
- Horizontal and/or vertical document rulers, for precise positioning.
- Custom page sizes.
- Print preview.
- PostScript printing, in black & white or color.
- High-quality graphics printing for jaggie-free output.
- Print NLQ text and graphics at the same time.
- Complete printer control, including sideways printing and 4,096 color printing.
- Automatic timed saves and backups.
- Import and export Professional Page text files.
- Comprehensive keyboard commands.
- Easy to use "3-D" user interface look.
- Fully customizable.
- Full support for Kickstart 2.0.
- Requires Kickstart 1.2 or later, one megabyte of memory, and two disk drives.

NEW HORIZONS

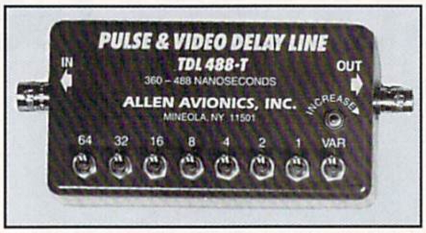
New Horizons Software, Inc. • 206 Wild Basin Road, Suite 109 • Austin, Texas 78746 • (512) 328-6650

Circle 65 on Reader Service card.

Signal Achievements

Allen Avionics' new **TDL488-T Video Delay Line** ($325) promises to let you easily time all video signals to that of the Toaster. In addition to an internal 360-nanosecond insertion fixed delay, the unit provides a 127-nanosecond switch variable delay—made up of 1, 2, 4, 8, 16, 32, and 64 delay steps, for a total of 487 nanoseconds. A ± 1-nanosecond fine trimmer lets you tweak the delay exactly and provides for control over the total color image. (RS# 120.)

RGB Dynamics' new **CDR-950 Color Encoder**-on-a-card fits into your Amiga 2000 or 3000 and converts analog RGB signals into a true broadcast-quality composite or Y/C output in either NTSC or the European PAL video formats. **The Translator**, another video product from the same company, is a hardware solution to scan conversion. it promises to automatically transform EGA, VGA, SVGA or Macintosh signals into true broadcast-quality NTSC or PAL signals in composite component and Y/C formats. (RS# 121.)



The TDL488-T: Nanosecond to none?

Maintain control over your DPS Personal Series TBC or V-Scope from afar ►



ON-LINE SCAN

By Tim Walsh

Nothing gets your Amiga into the 1990s like a 68040 processor. If you've got Motorola's answer to computer steroids plugged into your Amiga, you should know of the several '040 utilities available on the nets. To make life easier for speedsters, I rounded up all the '040 optimizers I could find. These are not necessarily compatible with every accelerator card, but should get you started.

If you're using a Progressive Peripherals 68040 board, be sure to get fastrom040.lzh, a FastROM Memory-Management Unit program for both the A2000 and A3000 from BIX's Amiga area. The more technically-minded may want arp040fix.lzh, a 2K fix for Arp problems induced by any '040, regardless of the brand.

GEnie users have some exclusive 68040-specific files to choose from. Amiga Library 11 contains two must-have files for Progressive Peripheral's 68040: file 16450 (NEWPROG040.LHA) and file 16493 (NEW040.LZH). Downloading these files will get you offerings from Progressive updated as of July. (Progressive may have made other postings by the time you read this.)

On GEnie, be sure to get file number 16071 from Library 4 in the Amiga area. This is SET040V115.LHA—Nic Wilson's popular Set040 utility in its 1.15 version. Users of NewTek's Toaster should check out Library 11 for file 16491 (TOAST040-.LZH), a utility for Progressive '040-equipped Toaster users.

On CompuServe, I found only one such file: 040ROM-.LZH in AmigaTech Library 11. It is basically the same program as fastrom040.lzh on BIX.

CPUSET.LZH, mentioned in last month's column, is one of the few accelerator utilities you'll find on Portal. For measuring 68040 performance, there are also several versions of LaMonte Koop's AIBB (Amiga Intuition Based Benchmarks) for the picking.

While Portal is short of '040 utilities at this writing, I wouldn't be surprised if the aggressive Portal sysops will have posted most of the 68040 files listed above by the time you read this. But the big news on Portal isn't files, it's Internet.

Casting a Wider Net

Portal has rewritten the telecommunication game rules with the introduction of a variety of Internet Services. The significance of this $5-per-month option is that you can now use Portal to download files from popular archive sites all over the world.

Internet's more significant features include FTP (File Transfer Protocol), which is used to transfer files over the Internet, and IRC (Internet Relay Chat), which allows you to communicate with up to 700 users worldwide sans additional charges.

Despite the system's inherent simplicity, the terminology used throughout Internet is foreign to the casual computer user. References to backbones, campus network liaisons and RFCs (Request for Comments), may seem meaningless to even seasoned telecommunication users. Realizing that this problem exists, Portal has responded with an entire area called "HELP for Internet Services" within the Internet area. You can use it to get assistance with any area that you cannot decipher.

Within Internet, there's also Telnet. One example Portal gives of Telnet's versatility is the ability get the daily lunch menu from a university in Colorado for no extra telephone charges. Telnet also lets you connect to multiuser games, databases, and information systems.

If you're a Portal user interested in Internet, just type "GO INTERNET" at any command prompt. As an interesting side note, users with an account on an Internet-connected computer will find detailed commands to access Portal free of charge.

Finally, the Amiga area's File Libraries/New Uploads area lists file number 39, which is file TCP-IP.LHA. This file describes the Internet networking protocols (TCP/IP) in great detail. Portal has gone a long way in dispelling the myth that the nets are staid, sluggish institutions where changes and improvements occur only occasionally, and then slowly. Expect to see the other nets follow suit.

BIX
800/227-2983
617/354-4137

CompuServe
614/457-0802
800/848-8199

GEnie
800/638-9636

Portal Communications
408/973-9111 □

with *Digital Processing Systems*' new **DPS RC-2000** multichannel remote control. With a single remote, you can control up to eight DPS TBCs (cards or rackmount units) and one waveform/vectorscope. You get dedicated TBC and V-Scope function keys, plus ten nonvolatile set-up memories for each TBC channel, and you get the advantage of individual digital shaft encoders for easy adjustment of all proc-amp and color-balance functions. (RS# 122.)

External Video

Maybe you can't fit a Video Toaster into the high-performance A3000, but that doesn't mean you cannot use the two devices together. ***Heifner Communications***' new **Toaster Cozzy** ($790 plus shipping) is a video slot in a box. It holds a Toaster, powers it (with a 65-watt regulated power supply providing a slaved instant-on feature), and connects it to the Amiga—without voiding warranties on either the board or the CPU. The Toaster Cozzy provides a neat video-slot solution for A500s as well, and for A2000s with occupied video slots.

The unit provides a built-in blackburst generator for video sync with five BNC outputs, and later this year, the Toaster Cozzy will accommodate not one, but two video boards via an upgrade. Heifner promises to upgrade its video cable in the future to maintain compatibility with advanced incarnations of the Amiga. (RS# 123.)

Power Parts

Need a customizable graphics-processing/display device? Then take a look at ***Digital Micronics***' new **Vivid 24**. The board's modular approach lets you add features and power according to your needs. In its standard configuration ($2995), Vivid 24 includes one 4MB Video Memory Module (VMM), providing 24-bit color display in noninterlaced resolutions of up to 1024×768. You can increase your display to 2048×2048 in interlaced mode, however, by adding three more VMMs ($729 each). Add the Broadcast Quality Digital Video Encoder module ($729), and you'll be able to retain the quality of super hi-res graphics while moving them to videotape.

Designed to work with the Encoder module, the Video Effects Generator ($385) provides an input for two video sources and allows for special effects and switching on a pixel-by-pixel basis between the sources and Vivid 24 computer graphics.

Graphics math coprocessor upgrades come in both single ($585) and double ($1449) varieties. Each single coprocessor adds 40 Million Floating Point Operations Per Second (MFLOPS) and lets you render 25,000 shaded polygons per second; not surprisingly, the double coprocessor duplicates those results. With a double and two singles, Vivid 24 promises to achieve a total of 160 MFLOPS and generate 100,000 shaded polygons per second!

You can display a super hi-res Workbench screen via Vivid 24, and the board claims complete compatibility with all Amiga applications. To make those applications run fast, the board comes with 4MB of program memory. To increase speeds even more, you can add another 4MB program memory module ($385).

The board is A2000 and A3000 compatible, and comes with loads of software, including DMI Paint, a 24-bit paint package with all the standard tools in DMI super resolutions. The DMI Render software lets you import models and frames from other industry-standard 3-D programs and render in "near real-time" using either Gourad or Phong shading. And for configuring and controlling Vivid 24's programmable resolution output, DMI Tweek is the answer.

According to DMI, Vivid 24's rendering and image-processing power and super hi-res 24-bit displays—not available on any other platform at any price—will be a boon for 3-D rendering, real-time simulation, and medical imaging. (RS# 127.)

'Sno Storm

Feeling snowed under by slow processing and RAM limitations? ***Preferred Technologies***' new **Blizzard Board** promises to shovel you out with performance increases of 200%. The low-cost unit installs in the 68000 socket of the A500, A2000, and, with a special adapter, the A1000. Its 14-MHz 68000 processor doubles the clock rate of your CPU and memory access, but the board lets you switch back to 7-MHz mode to accommodate finicky software. A special "shadow mode" lets you run AmigaDOS from an optional 512K bank of dynamic memory for better overall performance. In addition, you can add 1, 2, 3, 4, 5, 6, or 8 megabytes of RAM via inexpensive DIP memory chips. Software that comes with the board controls many of its features and includes a memory-testing program. A five-year warranty rounds out the board's offerings. (RS# 129.)



Overheard

Would you like your Amiga-generated artwork to end up in the homes of over one million people? Then consider submitting music, graphics stills, animations, and videos to Willow Mixed Media, producers of Amiga artists on the Air, a cable-television series about Amiga art. Broadcast throughout the US and Canada, the program is now in its second year and recently became a finalist in the Hometown USA Video Festival.

You can submit work on disk in IFF or ANIM-5 formats, or on 3/4-inch tape (Hi8 and VHS are also acceptable). For a program listing and a roster of stations that carry the series, send a self-addressed, stamped envelope to: Willow Mixed Media, PO Box 194, Glenford, NY 12433. You can call or fax them at 914/657-2914. If you don't find your local cable channel on the list, contact Willow for information on how to arrange showings. Past programs are available on VHS tape.

Spectral Lines

So you want the whole spectrum of 24-bit, real-time video framegrabbing? ***Preferred Technologies*** gives it to you. **Spectrum**, its new high-definition video device, grabs an image in frame mode in 1/30th of a second or in field mode in 1/60th of a second, and digitizes using a full palette of 16 million colors. Under software control, you can freeze images, hold them in the unit's built-in framebuffer in 768×480 NTSC format, and then view them on a standard composite monitor.

Image data transferred through the parallel port to the Amiga is digitized, while the original image remains in the framebuffer. The hardware provides two BNC connectors for composite video in and out, the parallel data port, a connector for an external power supply, and a complement of LED status lights to tell you at a glance the current mode of operation.

Full hardware control is provided by a single program that features plenty of pull-down menus and hot keys. Spectrum boasts support for many independent programs that you can run directly ►

GVP Enters the SOUND ZONE

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And a self-contained 4-track sequencer.

For all the sound effects and music you could ever imagine.

▶ **Record** sound samples from any source, including voices, noise, and pre-recorded instruments, to create your own instruments and effects.

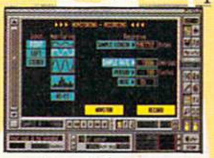
▶ **Edit** sounds quickly in real time. Add effects like reverb and echo, run sounds backward, alter wave forms, cut and paste sound segments, create loops, eliminate pops and scratches.

▶ **Compose** easily using the DSS 4-track sequencer and your Amiga or MIDI keyboard. Draw from up to 31 instruments at a time, in up to four octaves with 8 different variable effects. Mix and modify sounds in real time as you compose, through direct interface with the sound editor.

DSS Stretches the outer limits of 8-bit sound

- Create your own 4-track, self-playing musical compositions.
- Make soundtracks for home video, animation or visual presentations complete with voice-over, sound effects and music.
- Analyze voice patterns and stereo separation.
- Analyze graphic equalization of real-time sound.
- Remove "pops" from old phonograph recordings.
- Create custom instruments and sound effects by collecting and/or modifying pre-recorded instruments, voice, or sounds from any source, and use them in your own compositions.
- Save your sound and music to disk or send it out via modem for replay on any Amiga.





Check out these unparalleled features

✓ AmigaDOS 2.0 compatible; written in assembly language.

✓ Multi-tasking operation.

✓ 68020 and 68030 compatible.

✓ Comprehensive tutorial manual helps even beginners get started right away.

✓ Intuition-based graphic interface makes operation easy.

✓ MIDI-in capability.

✓ Direct interface between sequencer and editor.

✓ Hold 31 sound samples in memory at once – all shown on screen so they are easy to manipulate.

✓ Effects and processing capabilities include echo, mix, filter, re-sample, sound data inversion, playing sounds backwards, loops, fade-in/fade-out and more.

✓ Manipulate sound samples in real time, as you listen.

✓ Create sampled instruments with 1, 3 and 5 octaves.

✓ HIFI recording for highest quality playback.

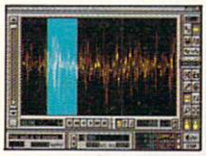
✓ Controls for faster/slower playback and filtering high frequencies during playback.

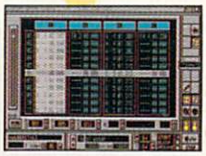
✓ Load and save samples, songs and instruments in multiple formats.

✓ Multiple effects for each note.

✓ Stereo and monophonic operation. Also convert mono to stereo or separate stereo.

✓ Auto-playing music modules.





✓ Real-time oscilloscope and spectrum analysis.

✓ Real-time reverberation.

✓ Graphic editing of wave forms through easy-to-use functions, including zoom in/out and precision controls for position, frequency and amplitude.

✓ Draw sound waves freehand using the mouse.

✓ Direct editing of individual sample numeric values.

✓ Maximum recording speed of 51,000 samples/second (38,908 samples/second in stereo).

✓ Savable Preference settings.

✓ Saves in IFF, SONIX or RAW formats.

✓ Compatible with SoundTracker, NoiseTracker and SoundFX modules.

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Circle 1 on Reader Service card.

from the CLI, so you need not create complex ARexx ports. The software can also compensate for a lack of phase lock in the source video via its special VCR mode, which computes each scan line. (RS# 129.)



OVERHEARD

Now that summer's over, it's time to doff your shorts—and send them to Video Shorts, the only nationwide video competition devoted solely to vignettes. This year's competition features a special Computer Animation category in addition to its general category. Video Shorts accepts entries of up to six minutes in length on ¾-inch U-matic or SP, VHS, S-VHS, 8mm, and Hi-8 formats in NTSC standard. You may enter up to three pieces; entry fees are $20 per piece and $10 for each additional entry on the same cassette. Postmark deadline is February 1, 1993.

The competition promises a minimum of ten winning entries, each of which will win its creator $100 cash and be mastered to a 1-inch tape for touring and archival purposes. For information and entry forms write: Video Shorts, PO Box 20369, Seattle, WA 98102, or phone 206/325-8449.

The International Television Association is not choosy about the length of productions submitted to its 25th annual Video Festival. The association does specify, however, that they must be created by video pros outside the broadcasting field. You can submit entries designed for training, student productions, public service, and six other categories. Get an entry kit from ITVA, 6311 O'Connor Rd., LB-51, Irving, TX 75039, 214/869-1112 (fax: 214/869-2980). Entry deadline is November 16.

MANY TONGUES

How can you go about getting your Amiga—and yourself—to speak Russian, Korean, and English? With ***Fairbrothers'*** **Audio Gallery** series of "talking picture dictionaries." Each volume of this series employs computer graphics and digitized speech and provides an iconized table of contents and a gadget-scrollable on-line dictionary. The English version can play in French, German, or Spanish translation mode; the Korean and Russian releases feature full use of Hangul and Cyrillic characters, respectively. (Earlier versions include Japanese, French, German, Spanish, and Chinese.) Prices range from $89.95 to $129.95. (RS# 133.)

GATEWAY TO EXPANSION

So you thought the **Golden Gate** connected the San Francisco Bay with the Pacific? Nah, it connects the Zorro and PC slots on A2000s and A3000s. It provides not only 25-MHz 80386SX PC/AT emulation, but also up to 16MB of RAM (4MB of which can serve as autoconfig Amiga RAM), a PC/AT IDE hard-drive controller, and, optionally, a PC/AT floppy controller for HD/ED floppy drives as well. You can upgrade ***Vortex***'s Golden Gate with an 80C387SX math coprocessor, and the board promises to support multitasking. (RS# 130.)

SOUND BYTES

Get into your Roland D-70 music—*really* into it, editing tones, patches, performances, rhythm setup, and other parameters in the friendly Amiga environment. With ***dissidents'*** new **D-70 Editor/Librarian** ($50), you get unique data-manipulation features that are not available on the D-70 itself.

The software lets you create new patches or alter existing ones using either the mouse or Amiga keyboard. As you do so, the D-70 responds instantly through MIDI so you can hear just what you're doing. You can save parameters on Amiga disks and send them back to the D-70 at any time. A tutorial offers tips on how to create new sounds. (RS# 131.)

WORD FOR WORD

Even if **KindWords** is not your word processor, you should know about the program's latest upgrade. Why? Because ***The Disc Company*** (now a division of Activision) is offering a $50 trade-in deal for owners of excellence!, ProWrite, PenPal, QuickWrite, Scribble, TextCraft, and WordPerfect, as well as earlier KindWords versions.

KindWords 3 ($124.95) comes on four disks (Program, Dictionary, Thesaurus, and Extras) and includes a new manual. It boasts the proprietary Human Interface Protocol, quicker typing speed, eradication of all bugs, 1.3 and 2.0 compatibility, and scores of new features.

The program accepts 255 standard Amiga fonts in a single document and lets you change font directories within the program. You can print using the Amiga's fonts or those of your printer, taking advantage of the program's enhanced high-density output ability. Graphics of any resolution and color are candidates for import, and the program can wrap text around them in a box or in contour.

Little extras include headers and footers for right and left pages, the ability to insert date and time in various formats, medium- and hi-res modes, horizontal and vertical rulers, adjustable tracking and line spacing, and measurement in inches or metrics. To improve efficiency, it offers on-line help and a toolbox containing the most commonly used commands. And to help you keep track of everything, the program tallies not only your word count, but total pages, paragraphs, lines, characters, and pictures as well. (RS# 132.)

COMMAND PERFORMANCE

It works like a music synthesizer, but controls graphics instead. The **Lightworks Graphics Synthesizer** ($599.95, ***Euphonics***) lets you "compose" computer graphics and "perform" your compositions live, either with or without musical accompaniment. (With the help of a genlock, you can also incorporate live video.) You get the conventional wipes and fades, plus powerful palette manipulation abilities and the capacity to interact.

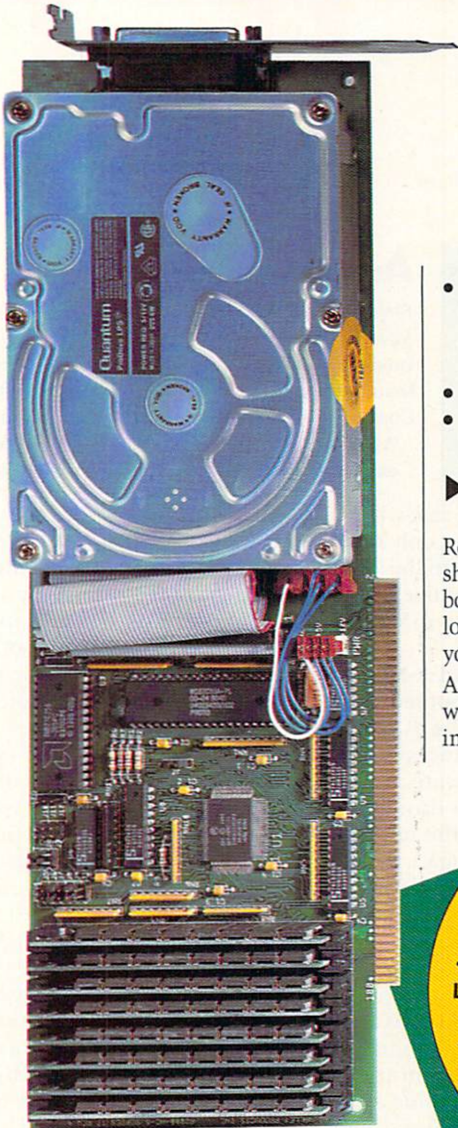
Your performances can be all interactive, predetermined, or a combination of the two. Effects are determined by a script, which you create with the use of menus and prompt messages; no scripting language is involved.

The package includes the program, a disk of graphics-performance presets (which you can either customize or utilize as is), and a hardware device that provides you with eight sliders and stereo-audio inputs. You can use stereo sound input—separated into its bass, midrange, and treble components—to create audio/visual compositions, and you can employ any MIDI-compatible instrument to control effects. In addition to the hardware module, you can use the Amiga's mouse, keyboard, and internal timers as controllers—either independently or in any combination you wish. (RS# 128.)

Overscan is compiled by Barbara Gefvert, Linda Laflamme, and Tim Walsh. Send your news, new products, and network information to Overscan, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. ■

#1—AND DRIVE-ING HARD TO STAY THAT WAY!

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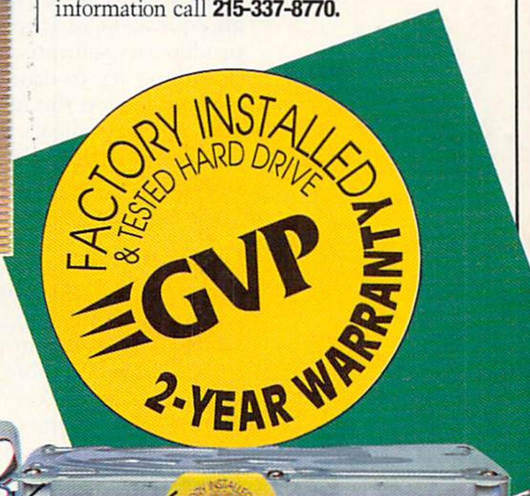
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- Fastest and easiest SCSI installation possible.

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REVIE

A-Max II Plus

Runs Macintosh software on the Amiga.

ReadySoft, $499.95.
A2000/A3000.
Internal, Zorro slot connection.
Installation: Easy.
Compatibility notes: Runs on A1000 with Zorro expansion box.
Hard-drive installable software.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 1MB RAM, 128K Mac ROMs, Mac OS.
Recommended system: 2+ MB RAM, hard drive,128K Mac ROMs, Mac OS.

Once in a rare while a product comes along that is not only supremely useful, but is also a tribute to the versatility of the Amiga and the inventive zeal of the Amiga development community. A-Max II Plus is all this and a whole lot more.

The best part of A-Max II Plus is that it does exactly what it's supposed to do. It runs monochrome Macintosh software as fast or faster than a Mac with an equivalent processor. It runs virtually all Mac productivity software and any well-behaved games that don't try to do illegal hardware addressing. (No big loss on the unsupported games; after all, you own an Amiga.) It supports sound, printing, modems, MIDI, large-screen displays, hard drives, AppleTalk networks, and, best of all, it can finally read and write Mac disks in Amiga disk drives.

Come of Age

The original A-Max was a clever hack. A-Max II was a useful, although limited form of Macintosh emulation. In its latest incarnation, A-Max II Plus has succeeded in becoming a true professional solution: elegant, practical, and very nearly bullet-proof. ReadySoft overcame its final design obstacles by adding direct support for all Amiga disk drives (internal, external, and high-density), file transfers to AmigaDOS hard-drive partitions, and compatibility with System 7.0. You no longer need a bulky, expensive Mac external drive cluttering your desktop, and, with System 7.0, you can finally multitask your Mac software.

A-Max II Plus takes over the Amiga to emulate the Mac, and it requires Macintosh 128K ROMs, which are sold separately at specialized dealers. You must also provide the operating system, available from Apple and in most major Mac software. The package is a hardware and software combination that fits into any 100-pin Zorro slot and hooks to the floppy connector (pass-through is included). You must plug in the ROMs, insert the board, and run the software.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 98.

For me, the whole procedure took less than 20 minutes. My board was slightly out of specification, however, and did not gracefully slide into place. When it did fit, the MIDI and modem ports on the back of the card were edged right up against the divider panels. The variance was not enough to prevent the cables from fitting in, but it was a nuisance.

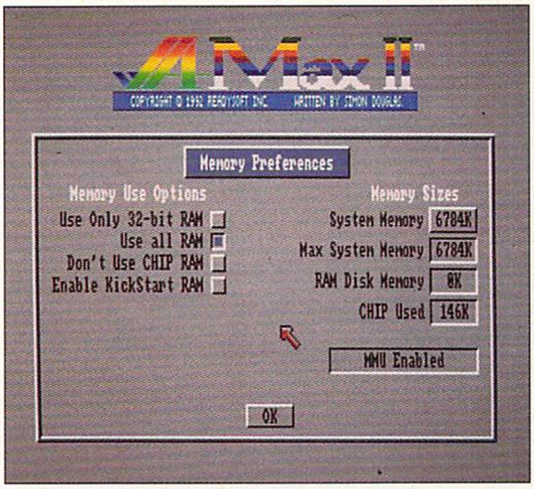
I tested A-Max II Plus with System 7.0 and several versions of System 6. I booted from Mac SCSI hard drives, Amiga SCSI hard drives with Mac partitions, the A-Max-created recoverable RAM disk, and Mac disks in the Amiga disk drives. A-Max performed flawlessly throughout.

I tested MultiFinder (Apple), Microsoft Word (Microsoft), PageMaker (Aldus), SuperPaint (Silicon Beach Software), PC Tools for the Mac (Central Point Software), Microphone (Sofware Ventures), MacDraw (Claris), HyperCard (Apple), Excel (Microsoft), Professional Composer (Mark of the Unicorn), and a host of other heavy-hitter software, old and new. There were no complaints from any of them. It choked on some games, but ran more of them than I expected.

Multitasking on a Mac is not quite as sophisticated as multitasking on an Amiga. Multifinder does not allow you to pull down a custom screen to get instant access to another screen. You can't display two screens at once, and the lack of a second mouse button requires some compromises, but System 7 checks out overall as well on A-Max as it does on a Mac.

The AppleTalk support was a surprising bonus. Although AppleTalk is a very slow standard, it works just fine, and you can't beat the price. I never thought I'd see my Amiga chugging along on an

W S



The A-Max II Plus's interface screen.

AppleTalk network, but there it was, transferring files and running four-person RoboSport (Maxis) over the network.

Invisible Efficiency

A-Max cheerfully found and used my Amiga parallel and serial ports, and it used my Epson clone nine-pin printer and Amiga modem as a Mac printer and Mac modem. Once the ports are selected through the A-Max start-up program, their use is utterly transparent. It was a kick to see that familiar Mac font rolling off my printer, looking every bit as good as an expensive Apple ImageWriter. You can use other printers as well, as long as you select the proper driver from the Chooser. To help, ReadySoft offers a special deal on PowerPrint ($99.95), which has a host of obscure Mac printer drivers. To test the serial port, I called some local boards and downloaded a clutch of Mac PD software, all of which worked without a hitch.

This user transparency is thoroughly integrated into the operation of A-Max II Plus. The video mode, screen size, display size (including scrolling virtual screens), memory configuration (including processors and MMUs), parallel- and serial-port selection and hard-disk drivers are all configured on the Amiga side at startup, saved, and then run automatically.

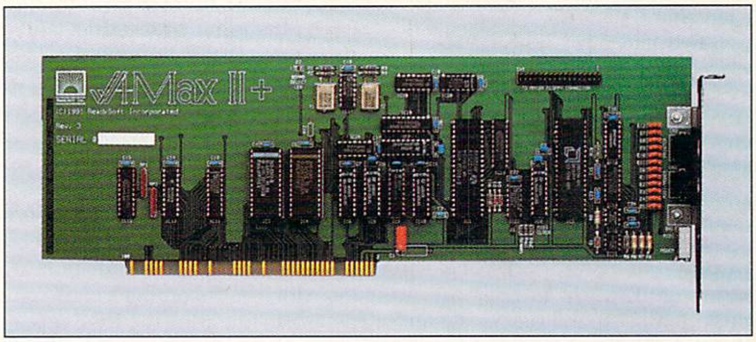
File conversion and transfer are easier in the new A-Max. Although it still handles file transfers in Mac mode only, the support for Fast-File-System hard drives makes the file-transfer side of A-Max easier to work with. The package comes with a Mac-formatted disk containing the transfer software, which lets you transfer Mac files directly to and from the internal floppy drive and the AmigaDOS Fast File System and Old File System hard-drive partitions. File transfer is still not as effortless as CrossDOS



YOUR TURN!

I love A-Max II Plus. It runs System 7 without a hitch, communicates at high baud rates, and (unlike A-Max II) works perfectly. I can't think of a single thing wrong with it!

Peter Veach
Appleton, Wisconsin



The A-Max II Plus board.

(Consultron), but A-Max II Plus is a step in the right direction.

The only hint of trouble in Mac-emulation paradise comes from Apple itself. Apple has reportedly tried to clamp down on supplies of the Mac 128K ROMs needed to run A-Max. Prices of these ROMS tend to be higher now than they were when the original A-Max appeared, ranging from a reasonable $150 to an overpriced $350. I had no difficulty finding reasonably priced ROMS at my local Diskcovery, but you might have to use one of the pricier mail order houses if you live in an area without a well-stocked Amiga store.

The A-Max market is a curious beast, and can't be completely served by the standard Amiga community or the conventional Mac market. I strongly recommend that A-Max users form a worldwide users' group dedicated to keeping information flowing on A-Max tips, ticks, idiosyncracies, and the pricing and sources of those precious ROMs.

He'd Do It Again

Overall, A-Max II Plus performed like a champ. On a stock Amiga, it's an inexpensive Mac clone. Adding a 68030, a large Mac hard-drive partition, and overscan mode or a larger monitor makes for a faster, cheaper super-Mac system.

After spending nearly a month with A-Max II Plus and System 7.0, I am utterly convinced of two things: that ReadySoft has another hit on its hands, and that I made the right choice in choosing the Amiga over the Mac.

—Daniel Greenberg ►

IMPACT VISION-24

Great Valley Products, $2199.

A2000, A3000.
Internal, Zorro and video-slot connections.
Installation: Easy.
Compatibility notes: Must be one of A2000's first three slots.
Hard-drive installable software.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 2MB RAM, hard drive; 5MB RAM, accelerator and FPU coprocessor (for Caligari).
Recommended system: 9MB RAM, hard drive, accelerator, multisync monitor.

24-bit display, multimedia, and video production.

A complex, integrated system, the Impact Vision-24 multifunction 24-bit display board and its Video Interface Unit significantly expand the Amiga's multimedia capabilities, easily serving as the center of a training or information system. In addition, its 24-bit display (including single-frame recording), multiformat transcoding, genlocking, and encoding abilities would be equally at home in a video-production house.

Like NewTek's Video Toaster, the IV-24 accepts a composite video signal, encodes and keys native Amiga graphics over incoming video, and displays 24-bit pictures. The IV-24 takes broader aim than simply video, however, succeeding well in many areas and limping along in others.

GO IN AND OUT THE WINDOWS

For flicker-free video, just hook up a multisync RGB monitor to the board's 15-pin monitor-out port. (While an optional adaptor lets you use a stock Amiga monitor, you lose the advantage of the deinterlacer.) Connecting to a port on the card, the external Video Interface Unit (VIU) has separated RGB, two composite video, digital- or analog-key, reference-sync, and SVHS inputs; outputs are composite, SVHS, and key.

For an additional $500, you can add the capabilities of the Component Transcoder version of the VIU (VIU-CT): separated RGB and sync output with full transcoding to component formats (Betacam and MII), key-out, Y/C, and composite out, as well as RGB pass-through for monitor connections. The IV-24 syncs to nearly any source, but GVP recommends a time-base corrector for best results.

Hardware and software installation are straightforward and well explained in the excellent manual. Moreover, GVP's technical support team is very helpful. They speedily replaced a faulty board for me and helped resolve several system conflicts.

Three programs manage IV-24's workings, input and output signals, and genlocking/overlay. The main user interface is the IVCP2 control panel, a Commodity under Workbench 2.0. (Under 1.3, two alternate programs control the IV-24 and the VIU.) IVCP2 provides button and slider control over the IV-24's function mode (scan rate, genlock, display depth), RGB and composite output modes, framegrabbing, calibration, input-signal processing, and output format. IVPiP handles IV-24's picture-in-picture feature, while IVGrab lets you grab frames from the board. All three programs are accessible from hot keys and ARexx controls for true integrated functioning.

Signal-processing gadgets handle gain, brightness, color, hue, red/blue contrast, and brightness and luma (white) levels for the incoming video signal. You can also fine-tune the RGB input and output, composite output (for color and sub-carrier phase adjustment), and composite key levels. I only wish the Toaster had such features built into it.

Also unique to the IV-24, the picture-in-picture feature brings the video source (composite, SVHS, RGB, and so on), into a 12-bit (4096-color) window on Workbench. Although it's not a standard Intuition window, you can position, resize, scroll, and scale the PIP window. You can even reverse the display for a Workbench window on incoming video. In addition, after setting save and image size defaults in IVCP2, you can freeze and grab the incoming video or the entire screen (video and Workbench) on the fly as a standard IFF24 file. The composite encoder is very clean and crisp; video passing through the VIU suffers no degradation.



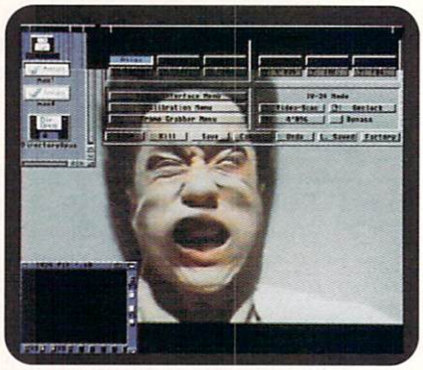
YOUR TURN!

I use Impact Vision-24 for grabbing frames off of live video—it's the best method I have seen. While it's not fully a real-time 24-bit display device, it sure has nice color and clarity. GVP's software is very smooth and runs under 2.0 without a hitch. The Video Interface Unit is really slick; it gives the machine multiple inputs and outputs, and its several LEDs let you know what's going on at a glance.

Michael Schiller
Fort Lauderdale, Florida

ALONG FOR THE RIDE

To enhance its production capabilities, the IV-24 comes with specially adapted versions of Caligari2 (a 3-D modeler and animator), Scala (a titling and presentation program), and MacroPaint IV-24 (a 24-bit paint program). They're the weakest players on the IV-24 team, however, so plan on investing in some third-party products that support the board, such as ASDG's Art Department Professional and Tecsoft's TVPaint.



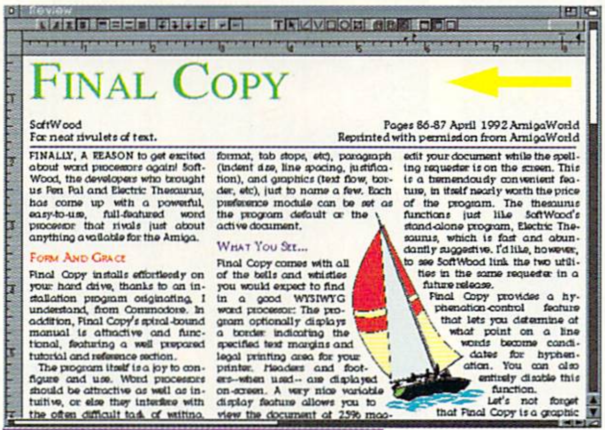
Genlocking is just one of Impact Vision-24's many facets.

Both Caligari2 (reviewed July '92, p. 20) and Scala (July '91, p. 78) are scaled-down editions, and both produce a correspondingly scaled-down sense of satisfaction. Simple to learn, Scala produces crisp titles with all the typographical attributes you could want, and it provides a wide variety of smooth page transitions. Pages and transitions are sequenced in a script that you can replay from the program or through an external player software. The two main elements missing are animation control and ARexx support; for these, you must purchase the full-blown multimedia version.

Featuring its familiar and fabulous interface, Caligari2 renders directly to the IV-24. It lacks point editing, dither control, antialiasing, and animation support, however; for these, you must upgrade.

MacroPaint IV-24 offers near-real-time painting (meaning that there is a bit of a delay while the changes are rendered to the IV-24's framebuffer) and a full ARexx implementation for easy automated image grabbing and cropping. While the program has quite an extensive range of features, tools, and effects, it nevertheless feels jumpy and sluggish. As a matter of personal preference, I also find awkward the tool and palette-strip placement and the method of working with custom brushes. ►

NO BRAG, JUST FACTS!



FINAL COPY

SoftWood
For neat rivulets of text.

Pages 86-87 April 1992 AmigaWorld
Reprinted with permission from AmigaWorld

FINALLY, A REASON to get excited about word processors again! SoftWood, the developers who brought us Pen Pal and Electric Thesaurus, has come up with a powerful, easy-to-use, full-featured word processor that rivals just about anything available for the Amiga.

FORM AND GRACE

Final Copy installs effortlessly on your hard drive, thanks to an installation program originating, I understand, from Commodore. In addition, Final Copy's spiral-bound manual is attractive and functional, featuring a well prepared tutorial and reference section.

The program itself is a joy to configure and use. Word processors should be attractive as well as intuitive, or else they interfere with the often difficult task of writing. format, tab stops, etc), paragraph (indent size, line spacing, justification), and graphics (text flow, border, etc), just to name a few. Each preference module can be set as the program default or the active document.

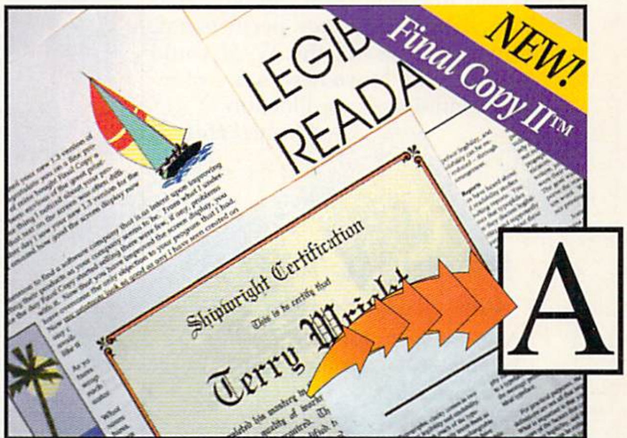
WHAT YOU SEE...

Final Copy comes with all of the bells and whistles you would expect to find in a good WYSIWYG word processor. The program optionally displays a border indicating the specified text margins and legal printing area for your printer. Headers and footers--when used-- are displayed on-screen. A very nice variable display feature allows you to view the document at 25% mag- edit your document while the spelling requester is on the screen. This is a tremendously convenient feature, in itself nearly worth the price of the program. The thesaurus functions just like SoftWood's stand-alone program, Electric Thesaurus, which is fast and abundantly suggestive. I'd like, however, to see SoftWood link the two utilities in the same requester in a future release.

Final Copy provides a hyphenation-control feature that lets you determine at what point on a line words become candidates for hyphenation. You can also entirely disable this function.

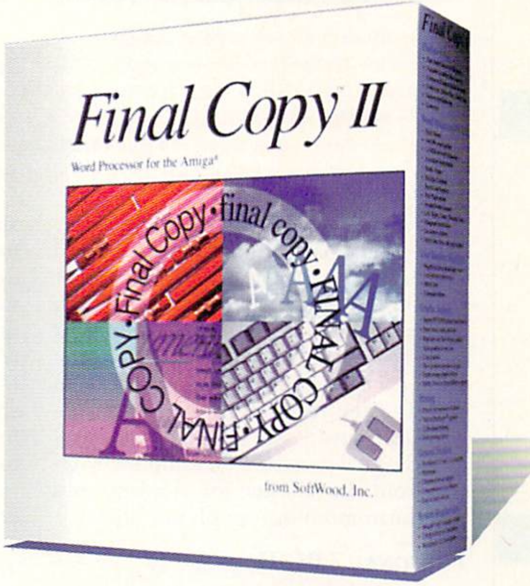
Let's not forget that Final Copy is a graphic

"Final Copy II's screen display is easy to read!"



Best output of any Amiga word processor!

To be a winner you've got to be a whole lot better than the rest. Final Copy is the first and only word processor for the Amiga that gives high-quality printing on any 1.3 or 2.0 Workbench supported printer. It comes with a 144,000 word spelling detector and corrector, 1.4 million response thesaurus with definitions, 35 outline typefaces, multiple newspaper style columns, IFF graphic support including 24 bit



ILBMs, real-time text flow around graphics, style sheets, master pages, structured box, oval, lines, and arrow drawing tools, typographic controls, mail-merge, color text, paragraph sorting, ARexx port, and true WYSIWYG PostScript® printing.

As one of our customers said, "You don't have to be a rocket scientist to see Final Copy has the best printing of any Amiga word processor."

Comparison Chart	Outline Fonts Included	Style Sheets	Master Pages	Line, Box, Oval Drawing Tools	Graphic Text Flow	Thesaurus Responses	Speller Words	Automatic Hyphenation
Final Copy II	35	Yes	Yes	Yes	Yes	1.4 million	144,000	Yes
ProWrite 3.2®	0	No	No	No	No	300,000	100,000	No

Comparison Chart	Snaking Columns	24 Bit ILBM Support	Editable Page Views	Outline Font Processing	Print 1 pg. Document	Math Support	Outline Fonts 1.3 and 2.0	Print Quality
Final Copy II	1-6	Yes	25-400%	Fast	53 sec.	Yes	Yes	Excellent
ProWrite 3.2®	1-5	No	No	Slow	2 min. 5 sec.	No	No	Good

Available at your local Amiga Dealer

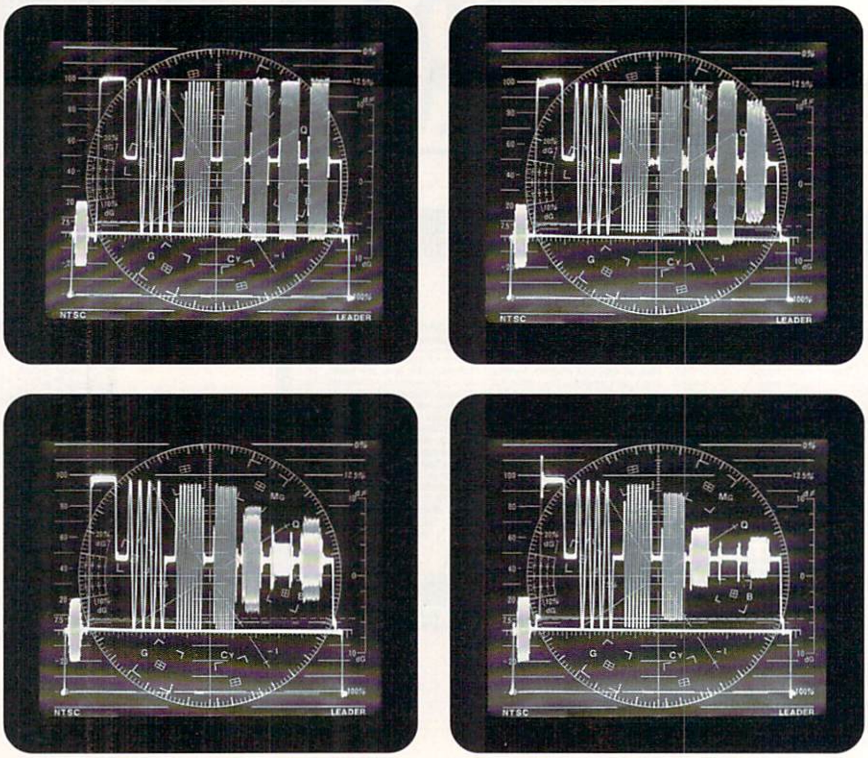
1-800-247-8314

SoftWood, Inc.

Circle 48 on Reader Service card.

Notwithstanding the above complaints, the IV-24 merits very serious consideration. It has a unique and powerful place at the center of a multimedia development and delivery station, and video producers will find it very useful as a display, encoder, and transcoding card, especially in conjunction with an external switcher. With better performance production software, the IV-24 could very well be the brave new future of integrated multimedia production.

—Michael Hanish



The multiburst signal shown (upper left—reference; upper right—Personal TBC II; lower left—TBCard; and lower right—TBC/PCB) has five packets that represent the frequencies 400 KHz, 1 MHz, 3 MHz, 3.58 MHz, and 4.2 MHz, respectively, from the left. To determine signal-response quality, compare the results from each TBC to the reference. Each packet should pass its full amplitude from bottom to top; however, a comb or notch filter will make the 3.58 MHz packet appear squashed.

Personal TBC II

Digital Processing Systems, $995.

A2000, A3000, A3000T.
Internal, IBM-slot and serial connection.
Installation: Moderate.
Hard-drive installable software.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 512K RAM.
Recommended system: 4+ MB RAM, video-editing system.

Industrial video production.

TBC/PCB

Prime Image, $1050.

A2000, A3000.
Internal, IBM-slot connection.
Installation: Moderate.
Hard-drive installable software.
Not copy protected.
Accelerator compatible.
Minimum system: 512K RAM.
Recommended system: 4+ MB RAM, video-editing system.

Industrial video production.

TBCard

I.Den Videotronics Corp., $995.

A2000, A3000 (with additional power supply).
Internal, IBM-slot connection.
Installation: Moderate.

Industrial video production.

More and more video manufacturers are designing products for desktop instead of rack-mount systems—but do they stack up as well in the studio? To find out, I put three internal time-base corrector cards to the test.

The Personal TBC II, TBC/PCB, and TBCard were warmed up for an hour each in an Amiga 2000, A/B-roll editing environment, with a stable black-burst signal piped to NewTek's Video Toaster. I fed each one SMPTE color bars from the Toaster for evaluation on a vectorscope and, using DPS's software-based signal generator, a multiburst signal from the Toaster for viewing on a waveform monitor (see photos above).

Personal TBC II

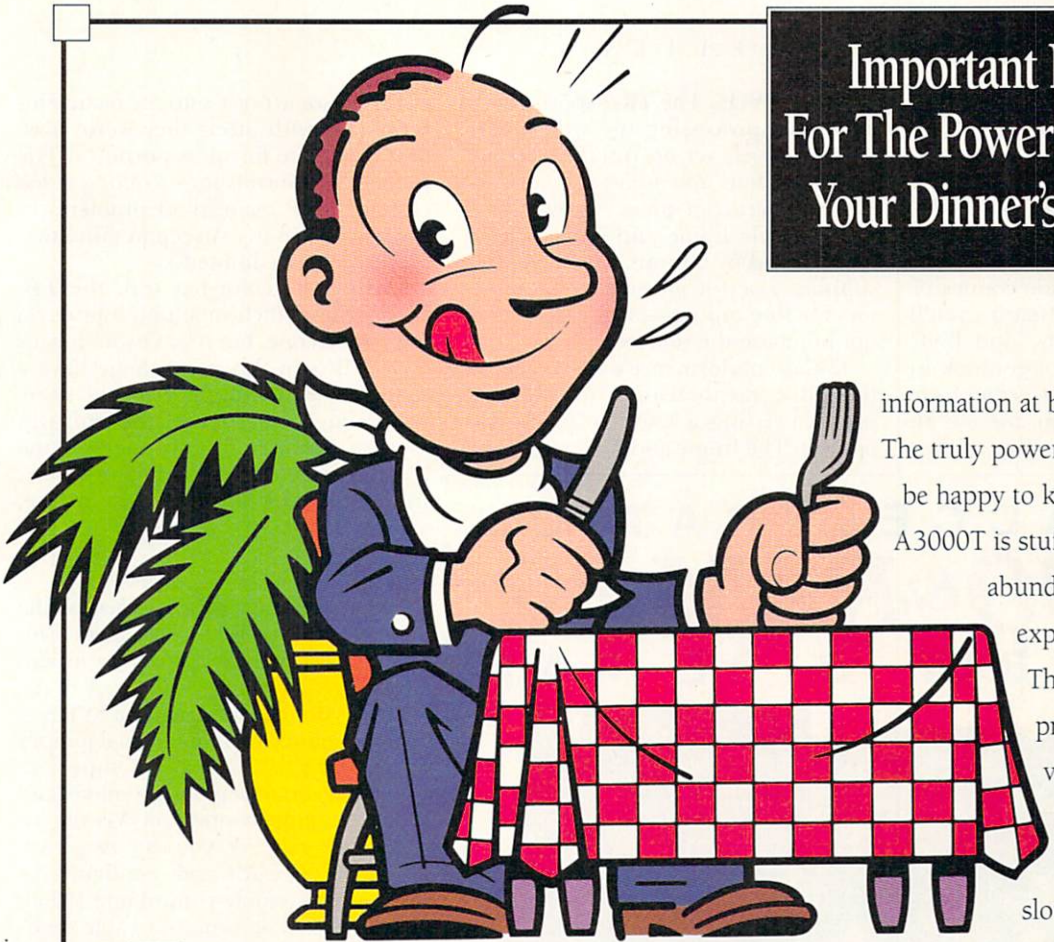
The back of the Personal TBC II card is packed with a genlock timing switch, a Telco serial-data in, an SVHS four-pin video in, BNC connectors for NTSC video in and out, multifunction I/O, genlock video in, and a genlock LED indicator. The multifunction I/O supports advanced sync out and can be configured through the TBC's internal jumper. A DIP switch for the connectors gives further flexibility. Also, for multiple sources, you can daisy-chain Personal TBCs.

The software installs automatically and sports a clear button- and slider-filled interface. The Video Processor panel lets you fine-tune video (signal), black (DC), and chroma (color) levels; hue (tint), and horizontal-positioning in percentages, degrees, and microseconds. You can also store and recall ten commonly used setting groups. To restore all settings to unity or reverse your last action, click the Unity or Undo gadgets, respectively. To specify which VTR the adjustments are for, click one of the four numbered buttons or All VCRs.

The Genlock menu lets you disable or enable the genlock feature and make coarse, fine, left, and right adjustments. To toggle between inputs (composite or SVHS), capture a single video field, or tweak the white balance, consult the Video Control buttons. The TBC Project menu takes you to and from the Video Toaster Switcher or Workbench and lets you load and save defaults. There's even a menu to control DPS's Personal V-Scope.

The Personal TBC II performed well in the edit. It produced a rock-steady signal on the vectorscope, indicating very stable chroma phase. The frequency response was also above average. On the downside, I could not get a stable freeze from the software option. Overall, the Personal TBC II is a good unit, but ►

Important News For The Power Hungry: Your Dinner's Ready.



Come and get it.

The new Amiga® 3000T multimedia workstation tower—the most expandable, flexible Amiga ever built.

Now powered by a 25 MHZ Motorola 68040 CPU, the A3000T is faster than ever before. (Current A3000T users can upgrade to a 040-based accelerator card for just $1,998.)



The A3000T features a 200MB hard disk drive. A 3.5" floppy disk drive. 5MB of RAM, expandable to 18MB. And 32 bit bus architecture to transfer mammoth amounts of information at breakneck speed.

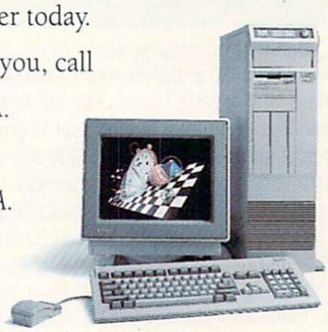
The truly power famished will be happy to know that the A3000T is stuffed with an abundant selection of expansion slots. There's a co-processor slot. A video slot for internal devices. Up to four PC slots. And up to five Zorro III slots. Every Amiga 3000 series computer comes with Commodore Express™ Gold Service options.* And convenient leasing terms are available.

Now, you'd expect a power feast like this to carry a fat price tag. But now through September 30, you can sit down to an Amiga 3000T with a monitor for just $5,998.** Which in itself is a powerful reason for seeing your Commodore dealer today.

For a dealer near you, call 1-800-66-AMIGA.

In Canada, call 1-800-661-AMIGA.

Bon appetit.



Commodore® AMIGA®

Circle 9 on Reader Service card.

I think it would be even better with a solid freeze.

TBCard

The TBCard is a hardware-only solution controlled through I.Den's TR-7 remote-control unit ($195), which plugs into a 15-pin, D-sub female connector on the back of the card. Nearby, you'll also find RCA connectors (and BNC convertors) for reference/genlock in and thru, video in and out, composite in, and Y/C in. In addition, there is an internal jumper for selecting either NTSC or SVHS. The TR-7 sports rotary knobs for processing the video level, chroma level, set-up (relative brightness), and hue. You adjust the horizontal and subcarrier phase via two small screws, while frame and field freezing are handled by buttons. Finally, I.DEN supplies a set of internal potentiometers for fine tuning—or in case you do not purchase the remote.

TBCard performance was average, although it was the easiest to control (I prefer twisting a knob to pushing a mouse). The frame and field freezes introduced some noise into the picture information with jitter; they were, however, adequate for most purposes. The processing controls for incoming video corrected the majority of problems in short order. (But just keep in mind that the features are limited.)

During the color-bar test, the TBCard exhibited chroma phase jitter on the vectorscope, but it was by no means fatal. TBCs in this price range have a tendency to be slightly under spec. For frequency response, the unit was average. While not top-of-the-line, the TBCard is worth considering for its straightforward interface, ease of use, and low price.

TBC/PCB

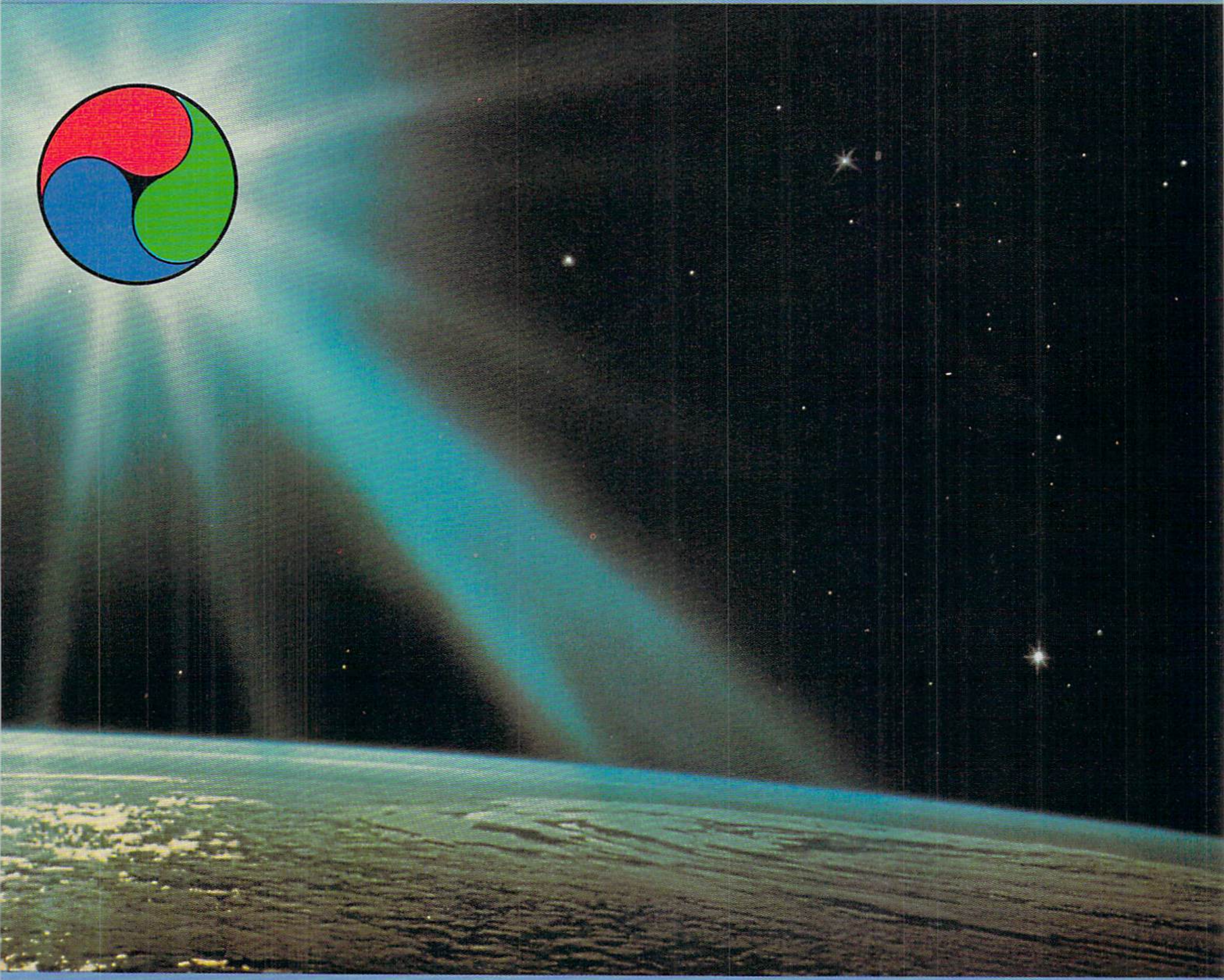
The TBC/PCB is just as packed as the other two. Three RCA connectors (with BNC converters) for composite in and out and genlock in grace the back of the board, as do industry-standard SVHS in and out connectors. An internal jumper for genlock termination is supplied, along with serial loop, serial remote, and external remote connectors. Via the internal DIP switches, you can assign additional TBC cards and configure for the optional remote-control unit ($250) or software. The remote's cable feeds through a hole on the mounting bracket and plugs into the card's 14-pin serial remote connector.

The remote's 14 multipurpose buttons and many corresponding LEDs let you control and monitor the board's functions. The primary and secondary operations scheme requires holding down the Function button to access the secondary features (setting the four presets; enabling automatic gain control; adjusting black and white; horizontal positioning and color alignment; vertical color alignment; and enabling the strobe). Primary controls select boards (channels) 1 through 4; adjust contrast, color saturation, hue, and brightness; select composite or Y/C; enhance sharpness; and freeze fields and frames.

Quicker to use than the remote's many key combinations, TBC/PCB's software features large, easy-to-read gadgets that control all the functions the remote does, plus two more. The software adds a speed setting for the strobe, as well as a Hide gadget, which pops you in and out of other programs.

The TBC/PCB gave a mixed performance in the edit. The freezes were satisfactory, with only a slight amount of noise and jitter. The strobing worked, but not as well as that available in the Kitchen Sync (Digital Creations). The horizontal portion of the video informa- ►

We Enlightened NASA with the Capabilities of AmiLink.



When NASA's video production department needed flexible, frame accurate editing with a mix of graphics and sound, they turned to AmiLink's computer-based on-screen edit controller.

At RGB Computer & Video, our engineers, programmers and technicians have an ongoing commitment to innovative technology and uncompromising quality, which is why AmiLink is the number one selling* video editing system in the United States and is leading the way in setting new standards of excellence in video editing computers.

Now AmiLink's Windows™ version boasts an ease of operation and features light years ahead of the rest of the video production industry at a fraction of the cost of traditional systems. For a demonstration, see a dealer near you or call for more information.

AMILINK

4152 W. Blue Heron Blvd., #118 • Riviera Beach, FL 33404
(407) 844-EDIT (844-3348)

* Based upon dealer sales figures. Windows is a trademark of Microsoft Corporation.

Circle 42 on Reader Service card.

tion was squashed, however. When I ran color bars into the unit, the vectorscope displayed almost 20 degrees of chroma-phase jitter, indicating unstable phase. With this problem, I can't recommend it.

Time Out

Time-base correctors have always been an expensive proposition. The latest generation is more affordable, but has costs of another kind. Currently, it is impossible to achieve true broadcast quality at the prices of these TBCs. With all its whistles, bells, and freeze capabilities, the TBC/PCB lacks the very thing you purchase a TBC for—the ability to time, stabilize, and correct signal problems.

Even the TBCard, with its simple hardware interface and freezing capabilities, falls short of fulfilling my basic requirements for a TBC. If you are looking for broadcast-perfect video, look elsewhere, but be prepared to pay the price. For industrial or near-broadcast projects, consider the Personal TBC II's clean signal, stability, ease of use, and price.

—Joel Tessler

21MB Floptical Drive

Digital Micronics, $549 ($649 external).

A2000, A3000; A500, A1000 with SCSI adapter.
Internal or external, SCSI bus connection.
Installation: Easy.
Compatiblity notes: Requires SCSI controller.

Mass storage; hard-drive backup; reading IBM floppies.

128MB Magneto Optical Drive

Digital Micronics, $1595 ($1695 external).

A2000, A3000; A500, A1000 with SCSI adapter.
Internal or external, SCSI bus connection.
Installation: Easy.
Compatiblity notes: Requires SCSI controller.

Fast-Access high-end storage.

When most computer owners hear the words "mass storage," they automatically think of a conventional hard drive. Digital Micronics' 128MB Magneto-Optical and 21MB Floptical drives are anything but conventional. Both use removable media, which means that you can increase their storage capabilities just by adding new data disks. Moreover, because both include a standard SCSI interface, they can easily be integrated into your existing SCSI hard-drive setup.

The 3½-inch magneto-optical drive is a rewritable optical drive. The technology is similar to CD-ROM in that it uses a laser beam pickup to read the disk. Unlike CD-ROM or WORM drives, however, you can write to these disks, erase your files, and write over them. The laser technology makes the drives extremely reliable, virtually silent, and somewhat more expensive than conventional hard drives. The small size of the data disk means, however, that it stores appreciably less than the full-sized optical disks (128MB or 121MB formatted versus 600MB).

DMI's floptical drive uses a new technology that packs 21MB of data (19MB formatted) onto what appears to be an ordinary 3½-inch floppy disk. The differ-

Continued on p. 54.



MORPHING MADNESS

Here are some hands-on tips for Amiga animators and videographers who want to try their hands at the hottest digital craze in the land—image morphing.

IT'S WILD, ADDICTIVE, AND TRENDY! What is it? Image morphing. Films and television commercials are flooded with scenes that seamlessly transform from one image to another. Trucks that shrink into racing cars, rock stars that turn into panthers, and the now classic face-to-face morph are just a few examples. The process has spawned some of the more fantastic special effects in the entertainment industry. Although much of the image morphing in the advertising industry is based on high-end proprietary software, the Amiga—with some very exciting new image-processing packages—is ready to make its mark in the morphing game in a big way.

Black Belt Systems*' Imagemaster** ($199.95) was the first Amiga program to offer image morphing, and now two other heavy hitters in the Amiga field—Great Valley Products*** (GVP) and ***ASDG***—are about to make a splash. We'll take a look at morphing basics in the main part of the article, using Imagemaster as our reference, and also tackle a morphing project. The sidebars accompanying the article will then provide sneak previews of beta versions of the two highly promising newcomers—a GVP product that is currently code-named **Mirage** and ASDG's **Morph Plus.**

THE "REAL" THING

Image morphing should not be confused with three-dimensional metamorphosis. The two processes are distinctly different; morphing involves flat (2-D) images, while metamorphosis is concerned with three-dimensional objects. In a metamorphosis, you create two different 3-D objects with corresponding points. Over a given number of frames, you move the points from the first object to the corresponding points of the second. ►

BY MARK SWAIN

The main problem with metamorphosis is that 3-D modeling has not yet evolved to a stage where a photo-realistic image, say, a human face or that of an animal, can easily be created without a cyber scanner—not to mention the nightmare of moving a few thousand points for the transformation to operate correctly. As you will see later in the article, however, you can use 2-D image-morphing techniques to help create 3-D animation sequences.

A more realistic approach to computer-graphics transformations is to start with real images. Video frames and photographs of real people or objects are perfect subjects for morphing. With the use of real images, it is not surprising that many people hardly realize this type of special effect is computer generated.

Morphing is accomplished by stretching and squashing both the source and destination image into the same graphic space. For example, in the case of morphing a truck into a car, you stretch the car image to fill exactly the same area as the truck image. The headlights, windshield, and grill of both vehicles should match as closely as possibly. As the morph progresses, the car image slowly returns to its original form as the truck image squashes into the shape of the car. A cross-dissolve is applied to the image sequence, creating the illusion that a magical transformation has taken place. While the process may sound complicated and does take a bit of time to set up, morphing turns out to be a rather simple, yet impressive technique.

Morph Basics

With Imagemaster, simply load your beginning and ending images, then select the morphing option from the Composition panel. The two images are displayed in one-quarter size next to each other at the top of the screen. A control panel located at the bottom of the screen contains all the morphing tools you will need.

Start morphing by placing points on the first image along the edges and features of the subject you wish to morph. Basically, these points move a give number of pixels under them in a given direction—a method similar to that of a controlled smear with sharp edges that you can perform with some paint programs. With each point moving only a few hundred pixels, it is necessary to use numerous points close together. As you place the points on the first image, they will also appear on the second.

You do the morph by moving the points on the second image so as to correspond to the same features in the first. This lets Imagemaster push both images into

MIRAGE: THE WORLD ACCORDING TO WARP

A BRAND-NEW image-processing system from GVP sporting the code name "Mirage" is about to make some giant "warping" strides into the morphing arena. The image-morphing function in Mirage is drastically different from that of Imagemaster. Morphing in Mirage closely resembles the techniques used by high-end special-effects systems. The program's image morphing is based on a spline mesh that actually warps the image instead of pushing or pulling pixels. This allows for cleaner edges, better alignment of subjects' features, and a smoother morph overall.

The morphing function in Mirage can be found in the Hooks requester, accessible from the main menu. Mirage provides a familiar two-window display, with the source and destination images each displayed in their own windows. You can rescale each of the windows all the way to full screen, allowing for detailed morphing setups. Individual morphing tools are available via convenient pull-down menus.

To set up a Mirage morph, first load

With GVP's Mirage, transforming one image into another is a process of image warping rather than image morphing.





the same graphic shape. Applying a cross-dissolve during the shape change produces the morphed sequence.

PREPARE TO MORPH

Software that allows the Amiga to morph is only part of the process. The preparation of the morph subjects is of vital importance, and there are some general rules of thumb you should follow. It is best to frame each of the subjects as closely as you can. With the subjects framed tightly and in a similar fashion, it is easier to set up the morph so that it will produce as smooth a sequence as possible. The edges of the screen should be considered off limits for Imagemaster users. If the morph subject touches the edge of the screen, Imagemaster has a tendency to pull black patches into the frame.

Also, as most backgrounds do not morph well, photograph your subject in front of a plain background or a solid-colored wall. If some other background must be used, shoot it first with the subjects and then without them. Using a paint program, you can remove the unwanted background, leaving only the morph subjects. In this way, you can set up your morph sequence using the cut-out subjects and later composite the original background behind the morphed frames.

Separating morph subjects is also a good way to morph more than one item at a time. If a scene requires a car seat, dashboard, and door panel to morph at the same time, the morph becomes difficult to set up in one pass. To complete the scene, separate the items, create a morph sequence for each one, and then composite all of the finished morphed elements together.

MORE MORPHING POSSIBILITIES

So far, we have dealt essentially with still morphs, but the technique is easily applied to full-motion morphs, as well. What happens in that case is that you perform a still morph between each frame of the source-image sequence and its corresponding frame in the destination-image sequence. Morphing each pair together, you can then render whatever number of morphed frames are necessary for the proper motion sequence.

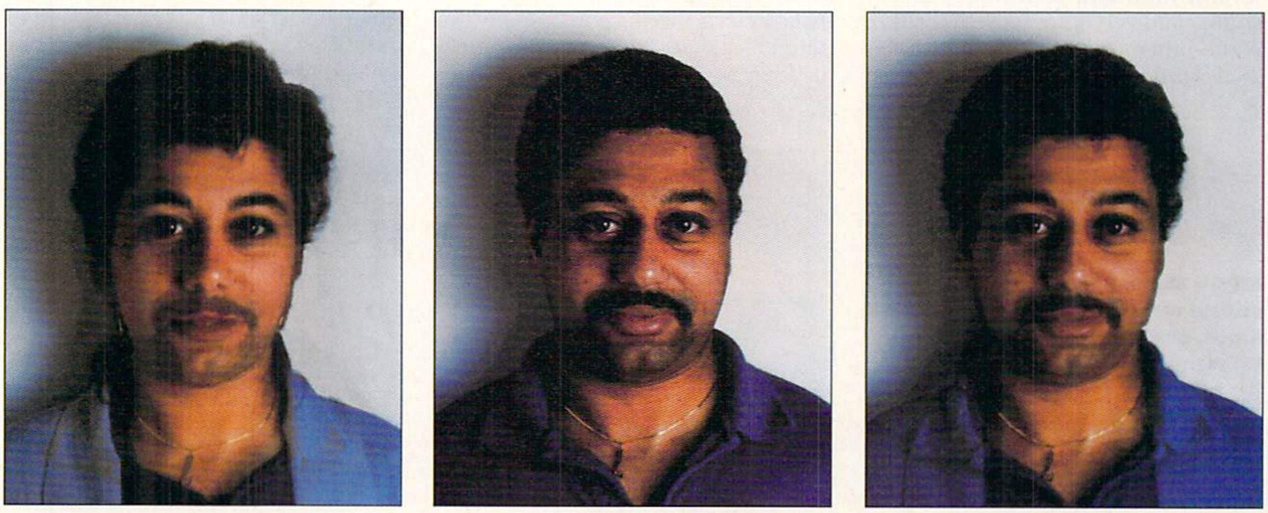
This process, unfortunately, can become very labor intensive, because you must set up each frame of the sequence individually to perform each separate morph. GVP's "Mirage" program, however, does provide an image-sequence load option that makes doing a full-motion morph quite a bit easier.

As mentioned earlier, you can also employ image morphing in creating three-dimensional animation sequences. The technique serves to simplify the process of creating complex 3-D objects that must morph into other 3-D objects in a given scene. Simply render the ►

an image into both the source and destination windows. A spline mesh is then displayed over each of the images, with a series of points at the intersections of the mesh. You pull the source-image mesh to match the edges and features of the morph subject, and then manipulate the destination-image mesh to match the corresponding edges and features of the destination image. Editing options are available for setting a timing curve for the dissolve, as well as for specifying keyframe rates. You can set the curves manually or use one of four presets—linear, sinusoidal, hyperbolic, or flat. The final sequence should produce a smoothly morphed transition.

Because the version of Mirage I used for this article was very much a beta one, I was not able to create a morph sequence for illustration in this article. The segment of the sequence that does appear here was produced by developers at GVP working with the latest version of the software just prior to the time this article went to press.

—M.S. □



objects in their correct screen locations with a plain background. Load the images into the appropriate morphing software, squashing and stretching them into a perfectly morphed sequence. Then, in a way similar to the background-compositing technique discussed earlier, you can create a computer-generated background that will later be composited behind each of the morphed frames. This is how the movie studios accomplished some of the more complicated 3-D morphs in such films as *The Abyss* and *Terminator 2*.

PROJECT "MORPHASAURUS"

To conclude our tour of image morphing, here is an Imagemaster project, some of the components of which can be seen in the illustration opening this article. My "Morphasaurus" example involves a human head that transforms into a dinosaur head—a twist on the classic face-to-face morph. While the face-to-face variety is immensely popular right now, remember that there are still vast untapped possibilities for image morphing available to the creative Amiga user. Once you get the hang of morphing, I urge you to try some of them.

It may be interesting to morph totally dissimilar objects, like a sports car and a person. The shapes and textures that a dissimilar morph generate are fascinating to watch. Also, try morphing a single image—with no dissolve. This type of morph can stretch and bend the image into an assortment of unusual shapes.

For now, however, let's concentrate on the morphasaurus. The two images required for the morph were first captured with the Video Toaster, while the background was painted a solid-blue color. The first image (me) was framed in the center, with only the neck and shoulders touching the bottom of the screen to offset Imagemaster's tendency (noted earlier) to pull in black patches from the edges of the screen. The image of the dinosaur head, provided by Criswell Productions in Van Nuys, California, was framed as closely as possible to match the first image. Using Imagemaster, I loaded the first image into the primary buffer and the second image into the secondary buffer.

To start morphing, you first define the features of the morph subject—eyes, mouth, nose, and hairline. The reason for detailing the inside features first is that due to Imagemaster's small morphing windows, you may

MORPH PLUS A FEW THINGS MORE

A PIONEER IN quality image processing, ASDG has recently been working on a new set of advanced image-processing tools. The result is Morph Plus, scheduled to begin shipping this fall, which works as both a stand-alone package or as an upgrade set of modules for AD Pro 2.

Morph Plus is strikingly different from other morphing programs currently available for the Amiga—or, in fact, for the Macintosh. The software is a hybrid product that combines several high-end techniques into a unique and very impressive interface. While other programs depend upon dual windows to display the source and destination images for setting up a morph, Morph Plus uses the full screen for both the beginning and ending images. You can display either image individually, or you can toggle an "onion skin" transparancy mode (similar to that of Electronic Arts' DeluxePaint IV or Disney's Animation Studio) to instantly show the differences between the morph subjects.

Setting points in Morph Plus is accomplished in a somewhat different way than in Imagemaster's point-setup mode. Each "point" is actually a vector that connects specific points on the two different images. Each vector mathematically warps the image in a given direction according to its beginning and ending points, which are respectively depicted by a solid and open square. Once they're established, you can view your "points" as line segments or as individual points. To help tell which points are which, you can number them. You can also zoom in on the image to differentiate between points that lie very close together.

Once you have loaded your source and destination files, AD Pro automatically converts them and displays the source in a full-size screen. Starting with either image, you outline the features of the morph subjects, using the appropriate end of the vector. The program is

ASDG's Morph Plus offers an arsenal of tools for producing morphs, warps, and other image-processing functions.





quickly encounter great numbers of points that become too close together to move easily.

Place the points on the source image, using the Add Points command. When placed, the source points will appear in the same x/y locations on the destination image. You then move these points so that they correspond to the same feature of the destination image. Via the Swap All command, Imagemaster causes the images and the points to change windows so that you can work on particular portions of the morph subject.

In my human-face-to-dinosaur-face morph, the eyes of the dinosaur are much larger than the eyes in the human image. I used the Swap command so that I could outline the larger eyes of the dinosaur more easily; these points could then be moved into a tighter pattern around the human eyes. In general, the Swap command allows the user to pick the features on either image that are the simplest around which to manipulate points. The number of points used depends on the complexity of the feature. You can morph a human eye with as few as eight or ten points, but, generally, the more points you use, the smoother the edges of the morphed subject will be.

Once you have arranged a particular feature of the morph subject, you can place the outline points of that subject. These points should simply outline the head, neck, neckline, and shoulders. Space these points evenly, keeping the total down to a fairly moderate number. The final editing of the morph will depend on the dissolve curve and number of frames you choose. I have discovered the best curve is one that starts slowly, dissolves quickly through a few frames, and then ends slowly. This type of curve works well because the dissolve is quickly animated and is thus less noticeable.

With the x and y resolutions set, you can commence morphing. A good way to test the morphed animation is to use Imagemaster's Film Strip tool, or to render the animation in low resolution. When you are satisfied, you can render the finished animation frames in full 24-bit high-resolution IFF or any other format you wish. ■

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capable of matching as many features as you are willing to set up. In testing Morph Plus on two human faces, it was possible to perfectly match the head, hair, nose bridge, nostrils, facial creases, and so on, right down to the inner ears and pupils of the eyes.

Once the morph vectors have been set, they are connected to a ribbon mesh, which allows for ultra-smooth manipulation, warping the image precisely along the mesh path. The program renders the morph at the rate of approximately three minutes per frame. It can perform true, full-motion morphs with the help of an updated version of the company's FRED (FRame EDitor) program, which is included in the package with Morph Plus.

Morph Plus's single-image Warping mode blends and stretches images with the same methods that are used in the two-image morphing module. For example, if you want to make a person's head grow over a defined number of frames, image warping provides the means.

Warps and morphs, however, are only part of Morph Plus. Its Ripple Generator, which ASDG describes as using ray-trace-style computations, allows you to cover an image with transparent material (water, glass, crystal, gelatin, and so forth) and then create ripples in it. You can create multiple ripples and make their waves interact when they come into contact with each other.

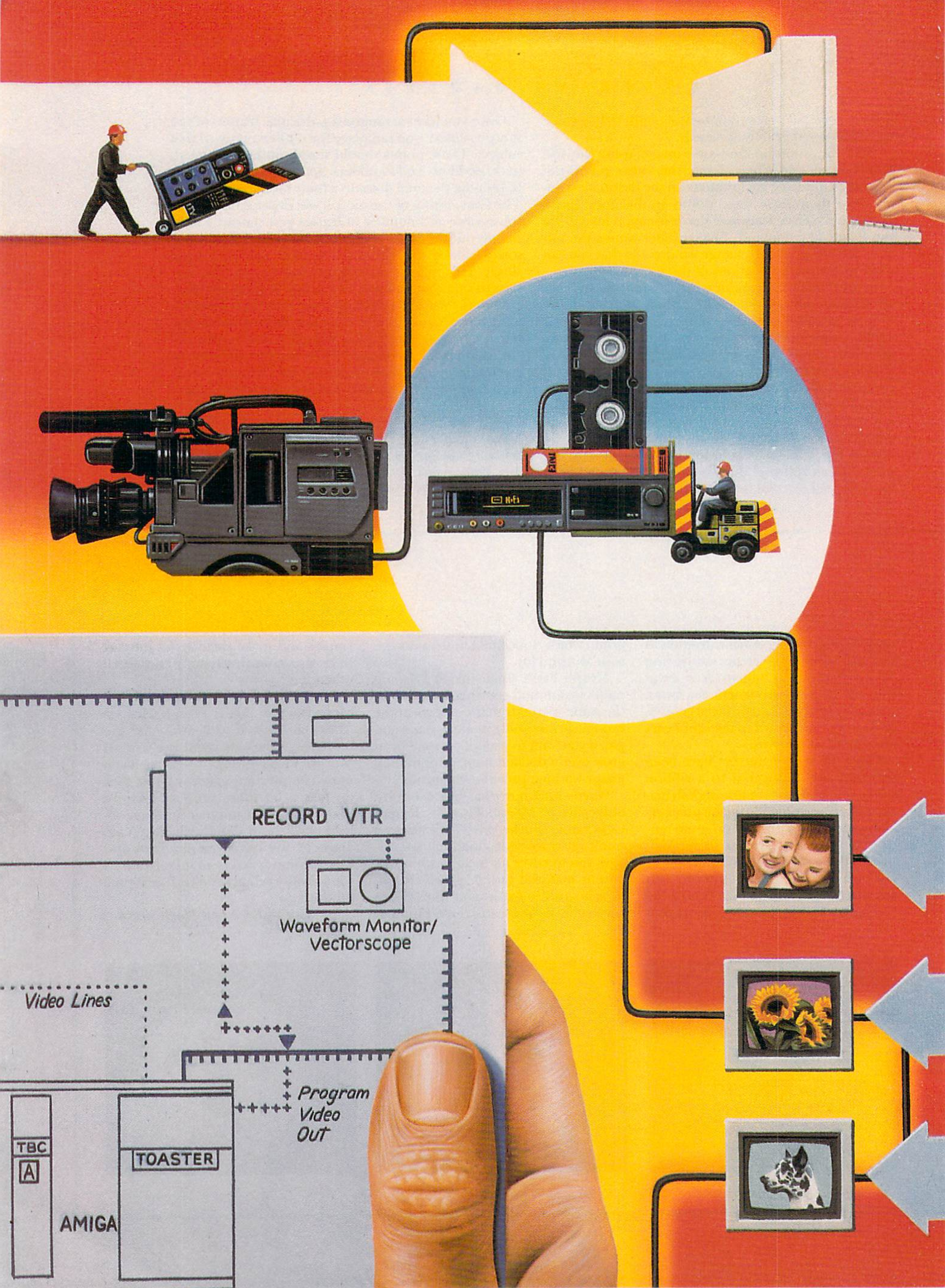
Perhaps most important of all, because you can access Morph Plus via ARexx and use it with other AD Pro features, you can combine any of Morph Plus's effects to create even more complex animations. While they do take a bit more time to perform than some of the popular hardware effects (like those done with the Video Toaster), the output is excellent and free of any artifacts or pixelizations commonly encountered with real-time products.

—Lou Wallace and Mark Swain □









RECORD VTR
Waveform Monitor/
Vectorscope
Video Lines
Program
Video
Out
TBC
A
TOASTER
AMIGA

Blueprint *for* Successful Video

If you want to get serious about desktop video, here's a no-nonsense guide to building a good, medium-priced studio using the growing family of Amiga-based video-production tools.

The Amiga, in conjunction with NewTek's Video Toaster, is at the center of the current desktop-video revolution. Today, a moderately priced video studio based on this dynamic duo can compete with megabuck professional- video facilities. If you're ready to step into the world of video production, but not ready to sign away a few hundred thousand dollars, then grab this guide for building your own Amiga-based studio and start planning. *(To locate vendors of the products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 98.)*

How It All Began

For years, the world of video producers was artificially segmented by manufacturers into a rigid caste system of "consumer," "industrial," and "broadcast." This marketing strategy resulted in the signal quality of equipment targeted to the consumer and industrial niches sometimes being purposely degraded by company engineers so that it would not pose competition for their own broadcast products—which were kept exorbitantly expensive. When NewTek's Video Toaster popped up at the NAB (National Association of Broadcasters) convention in Las Vegas in April, 1991, this all began to change.

Ironically, it was the recession-plagued broadcasters who exploded the biggest bombs under the old system and launched the desktop-video revolution into high orbit. Revenues were nose-diving in 1991, but broadcasters still had to compete with sophisticated—and expensive—MTV-style digital video effects. The Toaster's combination of affordability, versatility, and high-quality D2 NTSC video processing caught their attention. Suddenly, Amigas and Toasters began appearing in posh Hollywood facilities, cable studios, broadcast stations, and small studios across the land.

The "NewTek Revolution" fractured technofallacies that had plagued independent videomakers for years. Production quality today is as much a result of creativity and content as it is of cost. With careful attention to how you tell the story and to maintaining basic quality standards, a modestly priced studio can create distinctive video. The desktop-video revolution is based on a new ethic: "the best possible quality at the lowest possible cost—for everyone."

A good, medium-priced Amiga-based studio that can be upgraded as you go along will be built with the **Video Toaster 2.0** ($2495, ***NewTek***) at its core. If you have an Amiga 2000 (the most likely choice), you may want to add a **MegAChip 2000** board ($349 including the Agnus chip, ***DKB Software***) to bring your chip RAM up to two megabytes so your system will be able to handle heavy graphics and multitasking demands. Having at least 7MB of fast RAM is also wise. If you have an Amiga 3000, you need the **Toaster Cozzy** ($798, ***Heifner Communications***; bundled with the Video Toaster 2.0, $2690). If you have a souped-up ►

By Patric Hedlund

ILLUSTRATED BY DANIEL KIRK

A500 with a video slot, the Cozzy can also bring you into the ranks of Toaster users.

For hefty projects such as feature films and television series, multiple Amigas are often networked together with other computers. As your studio develops, you may add additional computer power. Because of the desktop explosion, PC and Mac developers are scrambling to make their equipment talk to the Amiga/Toaster now. Connectivity is the word of the future.

The heart and soul of my studio is the Amiga/Toaster, but we use Macs and PCs for business, databases, scripting, and storyboards. A PC clone services the Amiga/Toaster by providing extra slots for video cards and supporting a tape logger and edit controller with triggers for the Toaster and video decks. At the core, the Amiga/Toaster is used for production, all post production, and generating print graphics for marketing and storyboards.

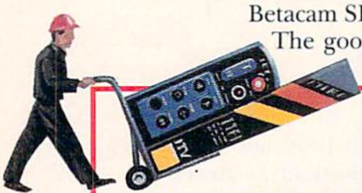
Format Wars

Whether your source footage is animation, live-action single camera, live-action multicamera, stills, archive footage, or a combination of all of them, the first and most formidable question you'll encounter is which video format to choose. The bad news is that there are a ton of choices. In ascending order of quality they are: 8, VHS, ¾-inch, Hi8, SVHS, ¾-inch SP, Betacam, MII, Betacam SP, 1-inch, D2, and Film.

The good news is that among them, you will find something to fit your budget. In general, the component and digital-encoding formats (¾-inch SP, SVHS, Hi8, D2, and Betacam SP) are later technologies with more sophisticated handling of the chroma and luminance (Y/C) segments of the NTSC video signal. No matter which format you choose, however, the ability to carry *real* SMPTE time code is critical. (See "Frames of Reference," *AmigaWorld* 1992 Special Issue, p. 27, for a detailed discussion of time code.)

The quality of your camera and lens will have as significant a bearing on picture quality as will the format. For single-camera field production, there are versatile camera heads that host dockable tape-recorder "backs." The ***Sony* DXC 537** can handle Betacam or Hi8 backs and even the Panasonic AG7450 SVHS backs. Betacam SP with time code is often the first choice of those who can afford it, but in rough environments or low-budget assignments, many videographers today have confidence in Hi8 as a first-generation format suitable for news and documentary programs. The ***Sony* DXC 325 3CCD** with a Fujinon lens and the **EVV9000** recorder also get good reports.

Don't be misled, though; Hi8 is a format used for low-cost sourcing, best converted immediately to a higher format. Few professional producers would consider creating an edited master in Hi8. Also, keep in mind that when using Hi8 tape, Metal Particle stock is recommended. The Sony Metal Evaporated tends to crack and destroy video information.



Black Boxes and Other Video Mysteries

WHAT CONVERTS AN expensive stack of metal and silicon circuitry into a powerful video-production system? Video engineers will tell you it's all in the timing. As any football team or stockbroker knows, good timing is rarely a matter of accident. The video engineer's secret is a series of black boxes, cables, and connectors that work powerful magic without a single eagle feather or chicken claw.

House Sync

It begins with a kind of metronome for video devices, a synchronizing pulse, called master sync or the house reference signal (i.e., "house sync"). The source of this pulse can be any device that emits stable and steady RS170A video-timing signals. Many people buy a special black-burst generator such as the ***Horita* BSG-50** ($289). Others dedicate a video-camera head (no lens required).

Time-Base Correctors

Although the Video Toaster can accept video inputs from a camera without signal correction, video from any videotape source needs to be processed by a time-base corrector (TBC). It coordinates the video signal to the house sync so that the switcher and the editor can combine video sources without any electronic hiccups. TBCs should have easily accessible "proc-amp" (process-amplification) controls for adjusting components of the video signal such as chroma, hue, luminance, and black levels.

Traditionally, TBCs were real black boxes outside the VCR. Today, several VCRs have built-in TBCs, and TBC cards that slip right into the Amiga are emerging. Many people, however, prefer external TBCs because: 1) isolation prevents the signal noise that can be introduced into your video when several devices that are close together share the same power supply; 2) it's nice to have knobs to wrap your fingers around when you discover you forgot to color-balance your camera during a critical scene and now need to try to "correct it in post"; and 3) most newer external TBCs have a convenient freeze-frame button that is instant, stable, and amazingly useful.

These stand-alone units, however, usually cost between $1200 and $4200. For that reason, the new software-controlled internal TBC cards, at about $900 per channel, have appeal for even the most conservative producer. The **Personal TBC II** ($890, ***Digital Processing Systems***), for example, is a single-channel TBC card that delivers impressive results. **The Kitchen Sync** ($1895, ***Digital Creations***) is a two-channel TBC with external controls that operate as if you were setting a digital wristwatch rather than using a traditional outboard TBC. ***I.DEN***'s **TBCard** ($995; with TR7 remote control, $1029) provides an outboard-box option for those who like to twirl the knobs. It is also the only card available at this writing with true interlaced freeze-frame capability. Be aware of the difference between *freeze frame* and *freeze field*. Several TBC cards offer a single video-field freeze, which is not broadcast standard and often jitters.

Time Code

SMPTE time-code readers/generators are what make your desktop-video studio actually smart. Using SMPTE code (a standard developed by the Society for Motion Picture and Television Engineers) gives a name and address to every one of your video picture frames. If you know the tape reel and time-code number, you can ask your edit controller to find any picture sequence for you.

True SMPTE code *must* be frame locked. Some devices say they have time code, but if it is not SMPTE standard, you will rapidly outgrow them. The Editizer edit controller (discussed in the main article) provides a built-in reader/generator (for LTC) at no extra cost. ***Horita*** offers a wide assortment of time-code readers/generators and window-dub inserters, such as the **TG-50** ($379), and even a VITC-LTC translator, the **VLT-50** ($289). Horita is a good company to check with when you are looking for a black-box solution to a problem at a reasonable price.

Test Equipment

Test devices like waveform monitors and vectorscopes are windows into the electronic subcomponents of your video signal. Once you've added a time-base corrector with proc-amp and color-correction adjustments, it's essential to see exactly what all that knob twisting is accomplishing.

The video monitor alone is not sufficient. A waveform monitor allows you to make sure that critical levels are within quality parame-

Sourcing in SVHS and ³/₄-inch SP formats is most popular among producers who plan their production for what is sometimes referred to as an "off-line on-line," using a mid-level video studio to produce the finished master rather than going to a high-priced on-line house. ("On-line" originally referred to equipment that was directly connected to and controlled by a central computer unit. Most production is now computer-integrated at every phase, so "on-line" refers to an expensive "finishing" process for video that includes and is akin to "sweetening" for audio.)

A word of caution about light cameras: Except for stylized sequences, your most professional look will come from using a good fluid-head tripod, or a device like the **SteadiCam Jr**. ($595, ***Cinema Products***). There are other solutions, but remember that unassisted hand-held shooting often results in critical material having to be discarded.

For multicamera switched production, Duarte Public Access Cable, like many cable systems, uses the Toaster as the center of the studio—serving as an on-line switcher and character generator during live production, then doubling as part of the editing system in post production. In this configuration, your cameras will need to be "genlockable," that is, able to receive an incoming genlock line to keep their signals timed to either a lead camera or a master "house sync" source. (We will discuss system, or "house," sync further on in this article.) The cameras feed into the Toaster's four inputs to appear on the switcher bus, and the Program Out goes to your recorder.

In multicamera productions, the recorder is often a table-top model rather than a portable. These same decks double as part of the editing system for post production. Popular decks range in price from $8000 for the ***Sony*** **VO9850** ³/₄-inch SP ($1315 with optional SMPTE reader/generator) and $6500 for the ***Panasonic*** **AG7750** (including built-in TBC) down to $2000 for the ***JVC*** **BR-S605U** (including HiFi plus two linear audio tracks and time-code jacks) for low-budget productions.

Note that if you are going to use SMPTE time code, unless your deck has a VITC (Vertical Interval Time Code) mode, you will need two audio tracks so that one can be used for the LTC (Longitudinal Time Code) track. Some decks, such as the Panasonic SVHS AG 1960, have only one linear audio track, although an adapter box from Carlson Strand—approximately $300—makes it possible to use time code and output HiFi audio at the same time.

Film and Animation

Sourcing on film is an option. The technology for SMPTE-coded film is being rapidly refined by Kodak, which is marketing a device to conform film SMPTE to video transfers. In this way, filmmakers can do post-production mastering on video for distribution in video, cable, or broadcast, or go back to a final film cut. ►

ters that will allow the video to be dubbed into distribution copies or broadcast without breaking up. A vectorscope provides a 360-degree look at the color signal, with "targets" for aligning your red, green, blue, yellow, and cyan. Trying to produce time-base-corrected video without these tools is as reckless as putting on a blindfold for a high-speed chase through LA traffic.

Tektronix is one of the older and more reliable names in manufacturing test equipment for broadcast engineers, but the price tags for its units—$2000 to $5000—are a little steep for most desktop-video studios. On the other hand, ***Digital Processing Systems***, offers the **VM2000 Personal V-Scope NTSC Waveform Monitor/Vectorscope** ($995) card for your Amiga, and ***Magni*** sells external devices that provide a vectorscope ($1195), a waveform monitor ($1195), or both ($1795). (See this months' Video Suite on page 48 for details.)

All Monitors Are Not Created Equal

No one would consider setting up a video studio without a monitor. Yet, technically speaking, some systems would be better off with nothing at all than with monitors that are prone to lie to you. Unfortunately, many monitors are rigged with special circuits specifically designed to tell you your video looks better than it does. Those lovely, low-cost Trinitrons are nice to look at, but they are deceiving. In fact, *don't* buy a monitor with color-correction circuits unless they can be disabled.

One approach for the low-budget studio is to use low-cost (even black-and-white) monitors on your source decks. Buy one good monitor for the output of the edit deck. This is your "program monitor," and you will need to set it up daily to create a stable "standard reference" for your video system.

To do this, you need to generate color bars directly into the monitor and then adjust the hue (phase), chroma (color), contrast, and luminance (brightness) on the program monitor. Even good "eyeballing" can leave you as much as 15% out of phase, so route the signal from the monitor into your waveform monitor and vectorscope to ensure that your setup is accurate.

There are many monitors you can choose from. One very picky engineer suggests the ***Panasonic*** **CT Series** ($390–$640) as good, low-end monitors. A more expensive but excellent choice is the ***Panasonic*** **BT Series** ($650–$890).

Don't drive yourself crazy trying to get your monitors to match; they frequently just won't do so. Set your program monitor once a day, and then *don't touch those dials*! If you do not like the way the video looks, just accept that as bad news and get back to your source video and the proc-amp controls. That's what your program monitor is there for: to let you know you have a problem while you are still in a position to do something about it.

Combatting the Video-Delay Demon

Routing a video signal through any device will slow the signal down slightly. For years, engineers have built video-delay lines into studio systems to compensate for the color shifts that are introduced as video winds through the signal path on its way to your master tape. Computer-based processors have a greater amount of delay. Delay through the Toaster is about 400–455 nanoseconds (ns), and "it's enough to turn your brown eyes blue." Delay becomes a problem when you mix the Toaster output with preToaster video, such as when you have another special-effects generator *downstream* from the Toaster.

A black box called an active video-delay line can be plugged into your system to correct the problem. Active delay lines allow timing correction without the insertion loss and distortion typically associated with passive delay lines.

Network Electronic Enterprises' **VDL1** (one-channel, $645) and **VDL2** (two-channel, $1025) broadcast-quality active delay lines allow programmable delay range up to 555ns. ***CCI Electronics*** combines active delay correctors in video distribution-amplifier (DA) packages, such as the **#800-3** ($560; one in, seven out, with front-panel active delay) and the **#800-8 Dual Active Delay Amplifier** ($595; with two composite-video channels and two DAs). CCI also makes several composite-to-Y/C component transcoders, all at reasonable prices.

—*PH* □

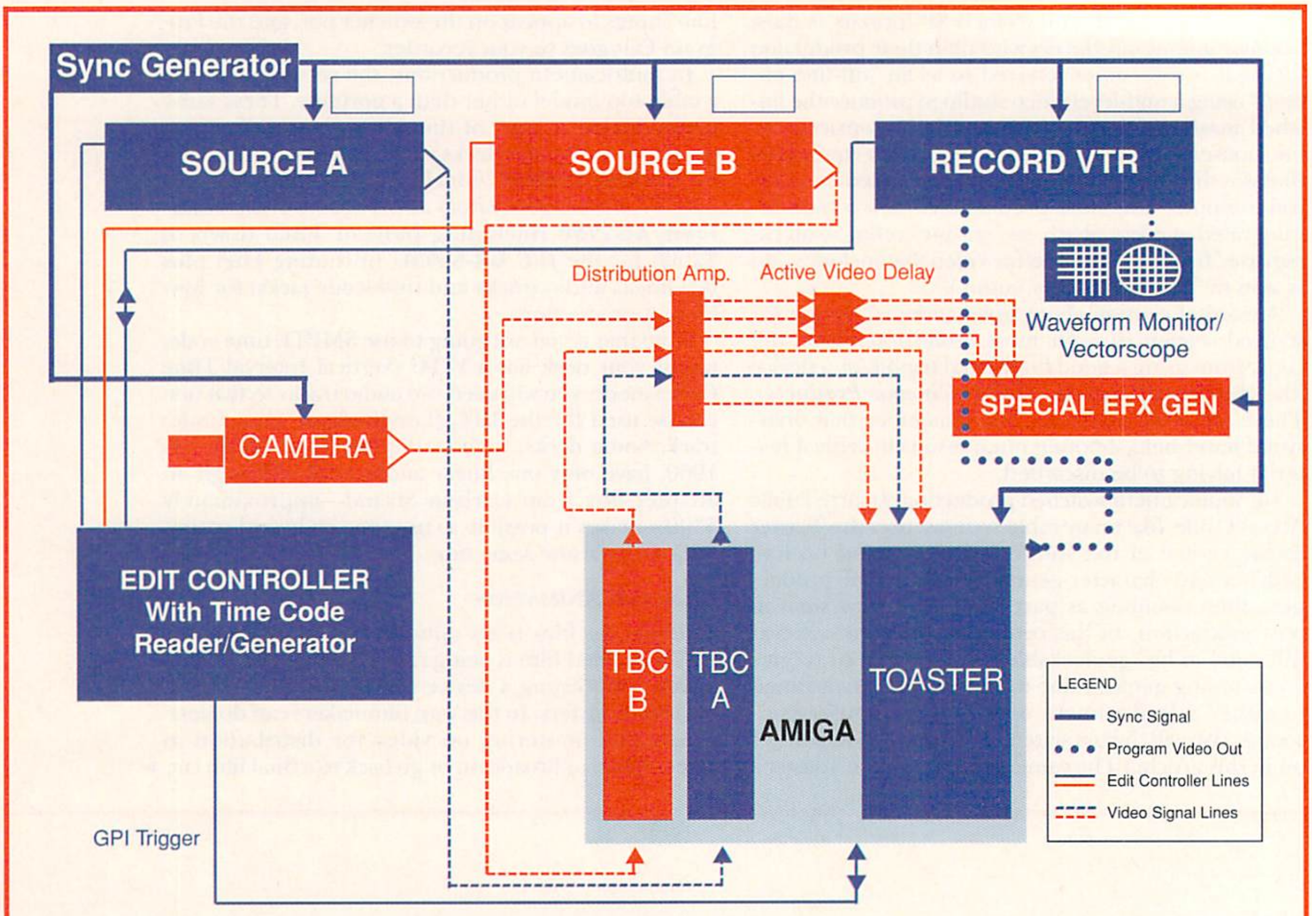


Figure 1. Post-production studio setups. (Diagram drawn by Patric Hedlund, in consultation with Network Electronic Enterprises.)

If animations are your specialty, the same format options exist, including transferring high-quality masters onto film. There are a number of stop-frame software controllers, such as the **Nucleus Single Frame Controller** ($425, ***Nucleus Electronics***), available for animators using time-code-equipped video tape decks for frame-by-frame recording. This is often tough on tape transports and prone to recorder error if you do not have a specially equipped deck.

An alternative method of compiling your animation frames is **The Moviemaker** ($499.95, ***Interactive Video Systems***), a graphic-screen, frame-by-frame edit-point system (with true SMPTE coding) that compiles on a hard disk at 100MB per minute. For instance, with a 400MB hard drive, you can edit in the digital domain—adjusting real-time playbacks until you are satisfied—and then record over to a video recorder in full 3.5-minute segments. That is a massive saving of wear and tear on your equipment and yourself. You can use this technique with any normal Amiga display mode (**DCTV**—$399, ***Digital Creations***—works well here) to compile animations in PAL or NTSC, providing you have at least a 25-MHz '030 accelerator, expanded memory, and a high-speed hard drive.

Keeping the editing process in the digital domain for as long as possible is also where video editing is moving. Although the video quality of systems that use digitizing techniques to compress and manipulate the picture is not yet up to acceptable standards, it is being rapidly refined. Apple's QuickTime Movies, as well as the Avid, Montage, Emc, and Matrox systems, are examples of evolving nonlinear and cut-and-paste editing options for video producers.

Several of these are used for expensive productions and TV sitcoms, although their final product is not actually video, but a computer list of SMPTE numbers—the EDL (Edit Decision List)—which is used by another computer/recorder system to assemble a final tape-based video master. You can do the same for much less money in your own studio today.

Post Production

The Toaster offers many of the automated effects you formerly would have paid for at an expensive on-line studio. That's one reason this new "middle ground" of desktop-video studios is thriving. In post production, the Toaster will serve as your editing switcher, character generator, and so on. Later, you may decide to include an additional switcher for even more flexibility.

Next to the Toaster, the most critically important element in the desktop-video revolution is a new generation of edit-system controllers. The recent advances in these systems is remarkable. Efficient edit-control software now automates what was once the most detailed ►

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and time-intensive part of the production process, substituting for an entire team of coworkers. Here's how:







1. As you review your production tapes, type your log notes directly into the edit-system computer, controlling the viewing deck with the keyboard and mouse.

2. With a single keystroke, capture SMPTE code points from the tape segments of your best scenes. The computer will automatically print the SMPTE numbers into the log.

3. Electronically cut and paste the log segments you want to include in your finished program. *Voilà*! You have created your EDL.

4. Tell the computer where you want Toaster wipes, titles, and framestore effects; it will insert those transitions into the EDL.

5. Sit back and call for dinner reservations as the computer directs the decks to auto-assemble your program.

One of the best edit-control tools on any platform is **The Editizer** ($1995, ***TAO***). It is an A/B-roll graphic screen editor that controls the Toaster plus six other edit-system devices. It is a great value, with three frame-locked SMPTE LTC readers and an LTC time-code *generator* built into the control box, making it unnecessary to pay extra for internal time-code readers in your decks (although it will work with decks that have internal LTC or VITC readers).

It does the logging noted above, and in addition remembers all Toaster settings and DPS II TBC (see sidebar) settings for each edit. It has seven GPI (General Purpose Interface) triggers to cue audio decks, laser discs, and other source equipment. It also allows you to search your log and EDL list comments by key words or time code. I've found it to be frame accurate using time code.

The Editizer supports RS422, Sony Control L, or RS232 serial ports for controlling decks, with an optional adapter unit to control parallel decks—allowing it to operate nearly every consumer and professional VCR on the market. The Editizer software runs on a 386 PC clone (PC, SVGA monitor, and 40MB hard drive—all for $888) with Windows ($105). The clone box is also handy as a kind of bus extender for the Amiga, providing additional serial ports, card slots, and power supply for add-on TBC cards, such as the DPS II, and the DPS Vector-Waveform Monitor card (see sidebar). You can also save your edit lists and logs on the PC hard drive, reserving space on the Amiga for animations and framestores.

AmiLink/VT ($5530, ***RGB Computers & Video***) is a professional-level A/B editor for the Amiga that can also talk to the Toaster. It does not have the logging capability noted above, but it does have a single-frame controller utility with adjustable frame rates for animation. It fits into an Amiga PC slot. To coordinate the tape decks, AmiLink uses VLAN nodes (Video Local Area Network)—which are accurate, but costly at $1115 each—to talk with up to 16 source VTRs, an additional switcher, and four record decks in your edit studio.

AmiLink will read VITC and LTC time code if you already have time-code cards in your decks. It allows you to edit your EDL, and, like The Editizer, it does a great job talking Toaster—storing your wipes, DVEs, and CGs in its edit list. It will trigger auto-loading of the DV1 and DV2 framestores, and it allows fading to effects and key setups.

The **MediaPhile** (***Interactive MicroSystems***) line of video products offers a logging system that integrates with the company's low-end edit-control system. Have a look and appreciate the services this product line offers, but add up what you might actually end up paying for the full system and then compare that with other alternatives. The difficulty inherent in remote infrared command targetting (decks starting at the same time or not starting at all) may be a formula for frustration.

Studio Setups

Now, let's examine Figure 1 to see how the primary hardware in a simple post-production studio fits together. Your first-level studio equipment appears in bluish-purple. Later, you may wish to include additional pieces of equipment, such as those shown in red. (Audio equipment has been deleted from this chart for simpler reading; but see "Anatomy of a MIDI Studio," Apr. '92, p. 37, for helpful audio details.)

The first-level studio has a single source VTR, often called a "cuts-only" system. With the Toaster, its character generator, and your framestore buffers, however, you can create the impact of multisource dissolves, wipes, and effects in your productions. The second-level studio includes another source VTR (for A/B editing), a graphics camera, and an auxiliary special-effects generator.

The signal from the black-burst generator (upper-left corner of the diagram) passes through a distribution amplifier and is fed to the entire system to keep all video components synchronized. The video output from each videotape source machine passes through a time-base corrector (TBC), one for each tape source, and then into the Toaster inputs. The Program output of the Toaster passes into the Master Record VCR. Monitors are connected to the video output of each VCR. Having test equipment and knowing how to use it is important. A waveform monitor and vectorscope should be on line so you can set up your equipment properly and monitor adjustments made to video signals through the TBCs.

The Edit Controller is your steering wheel to the system, allowing you to control all decks and the switcher from a single convenient console. SMPTE time-code readers for each deck and a SMPTE time-code generator allow you to accurately call up the tape segments you want to work with. Although not shown here, a patch bay is useful for organizing your cabling and allowing flexible routing between pieces of equipment without recabling everything.

Your production will be both creative and professional if you take care to maintain a high-quality signal path through each piece of equipment in your studio. The sidebar "Black Boxes and Other Video Mysteries" will tell you how. ■

Patric Hedlund is a Los Angeles-based director who has just finished a 37-part video series entitled Computers, Freedom & Privacy. *She is currently developing a television series about humor and creativity in cyberspace. She wishes to thank Gary Meyer, Don Kadora, Walt Davis Enterprises, and Nigel Redman for research assistance. Write to Hedlund c/o* Amiga-World *Editorial, 80 Elm St., Peterborough, NH 03458.*

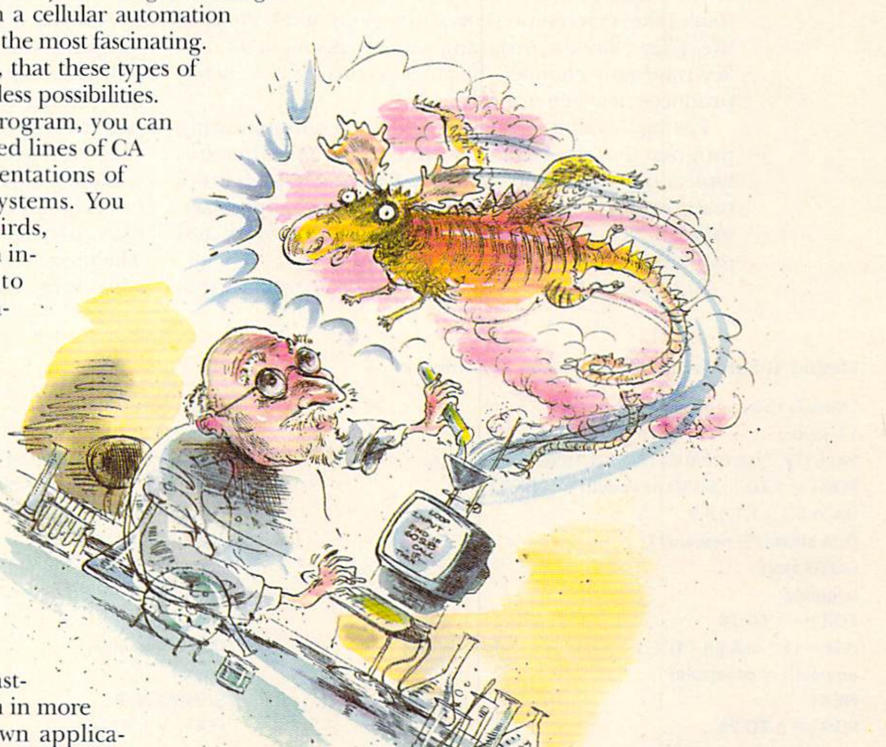
DIGITAL TEST TUBE

You don't have to be a biochemist or a "Mr. Wizard" to enjoy cellular automation programs. With some relatively simple CA code—like the sample Amiga Basic listings provided here—you can evolve representations of all kinds of natural phenomena.

Of all the ways you can use your Amiga, creating artificial life forms with a cellular automation (CA) program is one of the most fascinating. Few people realize, though, that these types of programs open a domain of endless possibilities.

With a cellular automation program, you can transform simple or sophisticated lines of CA programming code into representations of biological organisms and ecosystems. You can mimic the migration of birds, ants, bees, and bacteria. You can incorporate chaos algorithms to model weather patterns, population growth, and the spread of infectious disease. You can even form a link to neural networks and artificial intelligence. Just structure CA programs that create and wire neural network patterns, and they essentially learn by themselves.

To help you get started, we have included two simple Amiga Basic programs that should provide insights into the programming beasties that otherwise remain hidden in more complex, compiled, or full-blown applications. There are also commercially available CA programs on the market—for instance, **CellPro Cell-** ►



By John Iovine

ILLUSTRATED BY GARY HOVLAND

ular Automata Art and Animation ($89.95) from ***MegageM***. *(To locate product vendors, see the "Manufacturers'/Distributors' Addresses" list on p. 98.)*

Order Out of Chaos

Cellular automation programs vary in levels of sophistication; some are simple, while others are exceedingly complex. Generally, though, CA programs consist of a few simple rules. Complex patterns are not written into the program; they develop by themselves. When you initiate a few rules for the computer to quickly repeat, the program exhibits striking behavioral patterns that provide windows of opportunity to study and to model living systems and artificial intelligence.



Not everyone, however, has an acidic soup of bromate ions handy.

Listing 1 uses the text screen to generate a simple, random cellular automation. The program quickly fills the screen with two-color characters, then begins to scroll it upward. Each new line it produces at the bottom of the screen represents a new generation. Pressing the q key exits the program, while pressing any other key randomly changes the rules according to which it produces new generations.

Listing 2 is a bit more complex; it is a self-organizing program that can exhibit evolving forms and structures typical of what is known as the Belousov-Zhabotinskii reaction. That simple chemical experiment, undertaken some 30 years ago in Russia, led to the discovery and exploration of self-organizing systems.

In this experiment, a solution of bromate ions in a high acidic medium sits in a shallow dish and spontaneously forms centers of chemical activity. Each center creates expanding patterns of concentric, circular rings, or in some cases even spirals. As the patterns grow they begin to crash into neighboring patterns. Soon, the entire surface of the material is organized into a unique layout. The design then begins to decay and disappear as secondary reactions impede the primary one.

The experiment's visual impact 30 years ago was an unexpected but natural phenomenon. Today, the study of self-organizing reactions goes beyond its roots in chemistry into disciplines such as physics, cosmology, and biology. (Some experts believe that such self-organizing chemical reactions were a stage in the process of life's development.)

Not everyone, however, has an acidic soup of bromate ions handy. We therefore include Listing 2 so you can study this phenomenon yourself with the Amiga. It has three starting patterns—spiral, regeneration, and diffusion—from which to choose.

This program uses a 16×40 section of the text screen for display, and it considers each character in the display a cell. Each cell can recycle through three states—active, receptive, and quiescent. The program colors each character cell according to its present state: red means it is active, white that it is receptive, and violet that it is quiescent. The rules by which this cellular automation works are simple. Activity can spread to a neighboring cell only if that cell is receptive, and a cell returns to a state of receptiveness only after a quiescent period. This means that as an active cell decays to a receptive cell, it follows this color pattern: red to violet to white.

The program creates two data arrays—"newen" and "olden,"—that contain the present and previous states of each cell on screen. It uses the data contained in each array to update and modify the screen display. The program searches each cell in the olden array, and when it finds a quiescent cell, it changes it to a recep- ►

Listing 1. Simple Random Cellular Automation.

```
' Simple Celluar Automation in AmigaBasic
' J. Iovine
PALETTE 0,0,0,0:PALETTE 1,1,1,1:PALETTE 2,0,0,0
FOR i = 1 TO 8: READ n: code(i) = n:NEXT
DATA 0,1,1,1,1,0,0,0
DIM olden(77),newen(77)
GOTO start
begining:
FOR j = 1 TO 76
rule = (4 * olden(j - 1) + 2 * olden(j) + olden(j + 1))+1
newen(j) = code(rule)
NEXT
FOR j = 1 TO 76
COLOR (2-newen(j)),0
PRINT  CHR$(31);
olden(j) = newen(j)
NEXT
PRINT  CHR$(10);
a$ = INKEY$
IF a$ = "q" THEN COLOR 1,0:END
IF a$ <> "" THEN codechange
GOTO beginning
codechange:
cg = INT(RND(1) * 8) + 1
dc = INT(RND(2) * 2)
code(cg) = dc
GOTO beginning
start:
RANDOMIZE
FOR i = 1 TO 76
olden(i) = INT(RND(2) * 2)
NEXT
CLS
GOTO beginning
```

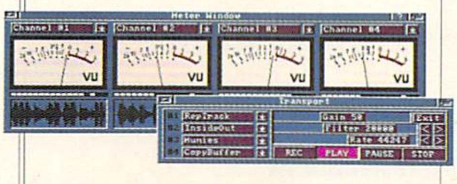
STUDIO 16™ IS DESKTOP AUDIO

Professional Digital Sound For Your Video, Music, and Radio Productions



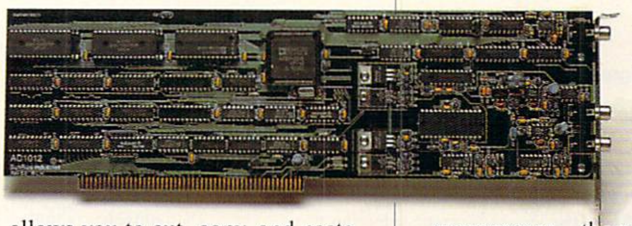
The Video Toaster goes a long way towards solving your video problems. But what about sound? Do you need to synchronize background music with your productions? How do you add footsteps, door knocks, and other sound effects to your video or animation? Do you need to fade, cross fade, or eliminate sections of audio? Can you edit your audio, or are you stuck with the first take?

Studio 16 solves all these problems by turning your Amiga into a complete sound studio. With Studio 16's SMPTE support you can lock sounds frame accurately with your video. Audio triggers reliably, at the same spot, every time. Or you can quickly slip your audio effects, trying them at different spots. And since Studio 16 plays directly off hard disk, the number of sounds you can trigger is unlimited.



Each of Studio 16's four tracks can be metered and mixed. Unlike two track systems, Studio 16 can combine multiple tracks with no generation loss. And it can record while playing.

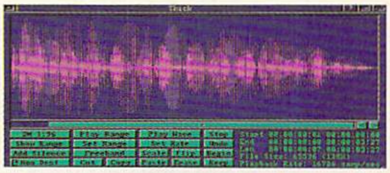
The Studio 16 sound editor graphs the audio waveform and allows you to cut, copy, and paste audio. Zoom, scale, fade, reverse, and many other functions are available. Edits can be non-destructive or permanent.



The included AD1012 hardware provides audio in, SMPTE in, and audio out connectors. Just plug your VTR, CD player, radio, tape deck, or other source directly in. Then record with 12 bits at sampling rates up to 80,000 samples per second. The AD1012 can synchronize and chase SMPTE time code at 24, 25, 29.97, and 30 fps.

how does the 12-bit AD1012 sound? Absolutely great!

—Amiga World, 4/92, p.29



Designed to exceptional audio standards, the AD1012 offers CD frequency response and 70dB signal-to-noise ratio.

The AD1012 includes a special sound coprocessor—the advanced 2105 DSP. The DSP allows Studio 16 to perform real time mixing and high quality 16 bit effects. These include echo, flange, delay, and chorus.



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Circle 57 on Reader Service card.

tive one in the newen array. When the program finds an active cell, it looks to the adjoining cells to see if activity (redness) can spread to any of them. If so, it changes all receptive cells to active cells in the newen array.

Next, it decays the original active cell into a quiescent period and places it in the newen array. After it has searched the entire olden array, the program displays the newen array on screen, while simultaneously copying the newen array into the olden array. When the display is finished, the program repeats the entire process.

Although these rules are simple, complex patterns quickly emerge after a few generations. Because the program is written entirely in Amiga Basic, though, the process is slow—the computer takes about ten seconds to update each screen display. If you run the program through a compiler, however, you expand the screen section to a full screen. I used the 16×40 matrix screen to speed up the program. If you work in assembly language, the program runs quickly enough so that you can use pixels rather than text characters.

Going on Your Own

I wrote this program with three basic seed patterns that evolve into more complex geometry. Do not consider these patterns a restriction, but rather a starting point. Feel free to change the pattern arrays to whatever you like. You will be pleasantly surprised by how interesting this program becomes after you play with it awhile.

The program uses the following number codes within its arrays to identify state:

1=white=receptive
2=violet=quiescent
3=red=active

Use these numbers in the GOSUB sections to change the beginning seed patterns. For instance, you could create a new starting pattern by changing the numbers in the array of the subprogram "Spiral." To ensure starting with a clean screen, the program fills both arrays with 1s before it enters the seed pattern. You need only determine the starting location of active and quiescent cells. ■

John Iovine is a programmer, hardware designer, and freelance writer who has contributed to several magazines, including Radio Electronics *and* Popular Electronics. *Write to him c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

Listing 2. Self-Organizing Cellular Automation.

```
REM Self-Organizing Cellular Automation Program
REM John Iovine
DIM olden(721),newen(721)
flg = 1: GOSUB setup
CLS:PRINT CHR$(13), " Use Mouse to make selection !"
MENU 1,0,1, "Selection"
MENU 1,1,1, "Sprial"
MENU 1,2,1, "Regeneration"
MENU 1,3,1, "Diffusion"
MENU 1,4,1, "Exit"
ON MENU GOSUB selection
MENU ON
WHILE flg
WEND
GOTO display
start:
FOR x = 40 TO 680
IF olden(x) = 3 THEN changearound
IF olden(x) = 2 THEN newen(x) = 1
  cscan:
  NEXT
    GOTO display
changearound:
  newen(x) = 2
  IF olden(x-1) = 1  THEN newen(x-1) = 3
  IF olden(x+1) = 1  THEN newen(x+1) = 3
  IF olden(x+40) = 1 THEN newen(x+40) = 3
  IF olden(x+41) = 1 THEN newen(x+41) = 3
  IF olden(x+39) = 1 THEN newen(x+39) = 3
  IF olden(x-40) = 1 THEN newen(x-40) = 3
  IF olden(x-39) = 1 THEN newen(x-39) = 3
  IF olden(x-41) = 1 THEN newen(x-41) = 3
  GOTO cscan
display:
LOCATE 4,1
FOR y = 1 TO 16: PRINT  TAB(19);
FOR x = 1 TO 40: COLOR newen(x+(y*40)),0
olden(x+(y*40)) = newen(x+(y*40))
PRINT CHR$(31);:NEXT
PRINT CHR$(13);:NEXT
GOTO start

setup:
 PALETTE 0,0,0,0    : PALETTE 1,1,1,1
 PALETTE 2,.8,0,.93 : PALETTE 3,1,.2,.27
  FOR i = 0 TO 721:olden(i) = 1:newen(i) = 1: NEXT:RETURN
'Enter Patterns
spiral:        'Spiral
GOSUB setup
  FOR i = 336 TO 346:newen(i) = 3: NEXT
  newen(307) = 3 :newen(335) = 2
  FOR i = 295 TO 306:newen(i) = 2: NEXT
flg = 0:RETURN
regen:         'Regeneration
GOSUB setup
  newen(380) = 3 :newen(381) = 3:newen(300) = 3
  newen(301) = 3:newen(339) = 3 :newen(340) = 2
flg = 0: RETURN
diff:          'Diffusion
GOSUB setup
newen(340) = 3: flg = 0: RETURN
bye:
MENU RESET
END
selection:
ON MENU(1) GOSUB spiral,regen,diff,bye
RETURN
```

Small Talk: The New Amiga 600 Revealed

Heard the latest? The newest and smallest Amiga has been approved for release in the US. After exploring the ins and outs of the Amiga 600, AmigaWorld*'s Chief is ready to talk.*

By Doug Barney



SINCE ITS RELEASE, the Amiga 500 has been ***Commodore***'s hottest-selling CPU, giving users multitasking, sound, and great graphics for the price of a good, used moped. Now the firm hopes to recreate that success with the all-new **Amiga 600**, a machine that many observers see as ultimately replacing the venerable A500. But is the bright white A600 worthy of assuming the low-end mantle? The answer for Amiga users is yes and no.

The first thing you notice about the new machine is its exceedingly small form factor, which is 9½×14 inches—roughly equivalent to Commodore's older C-64 computer. Don't let the size fool you, though; the diminutive case hides some real power: a full Enhanced Chip Set (ECS) and the new AmigaDOS 2.0. In some ways, it is like a cheaper, miniaturized version of the Amiga 3000, but, unlike the A3000, which incorporates the fast Motorola 68030 processor, the A600 runs on the original 7.16-MHz 68000. For many applications this is more than adequate, but this chip begins to show its weakness when doing serious work.

The advantage of the machine's small size is somewhat diminished by its use of the standard A500 power supply, that awkward brick-like thing that lies under the desk of most A500 owners. If four-pound laptops can have power supplies built in, why not the A600?

The A600 achieves its small size mainly by dispensing with the numeric keypad. That's fine by me. Unfortunately, the machine also dispenses with the expansion bus, which spawned countless add-on products for the A500 and A1000, from accelerators to drives to RAM to PC emulators. Moreover, the A500's A501 slot has been replaced with the A601 slot, which uses a different connector, and that's not so fine.

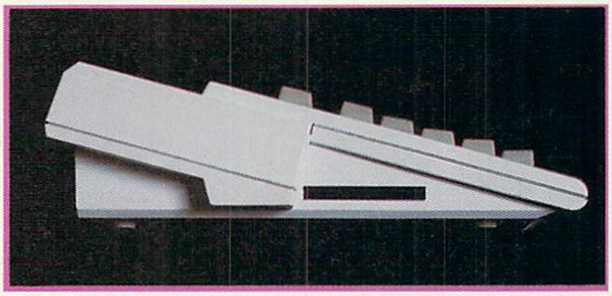
There are more expansion problems inside. Everything on the motherboard is surface mounted, which means you do not have sockets for internal expansion devices. Internal accelerators and other motherboard add-ons designed for earlier Amigas will not work in the A600, and it will be difficult to develop serious upgrade products for this system. In fact, the only thing that appears to have a socket is the Kickstart ROM.

With the new ECS graphics modes, a deinterlacer would be ideal. But current A500 deinterlacers will not work, leaving your optional interlaced video to flicker on ad nauseam.

In place of an expansion bus is a PCMCIA connector,

PHOTOGRAPHED BY EDWARD JUDICE

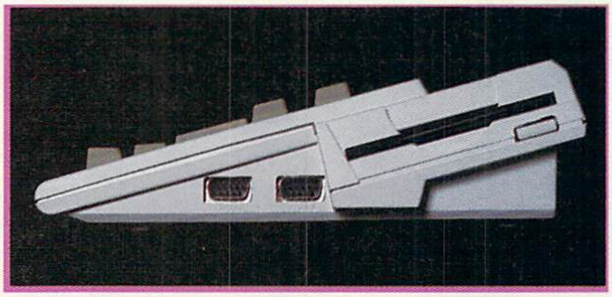
first seen on CDTV. This port will be used mainly for delivering applications, storing data, and providing solid-state RAM. So far, there is little that takes advantage of this feature, although ***Expansion Systems*** is now shipping its **BASEboard 601**. This bare board, which starts at $29.95, can add 1MB of chip RAM, bringing the A600's chip-RAM total to 2MB. All told, the A600 can physically address up to eight megabytes of RAM. Just as this article was going to press, *AmigaWorld* learned that Commodore will sell a 386 PC emulator that fits into the A601 slot. This exciting device could make the 600 a truly enticing dual-purpose computer.



The left side of the machine houses the PCMCIA slot, which replaces the popular A500 expansion bus.

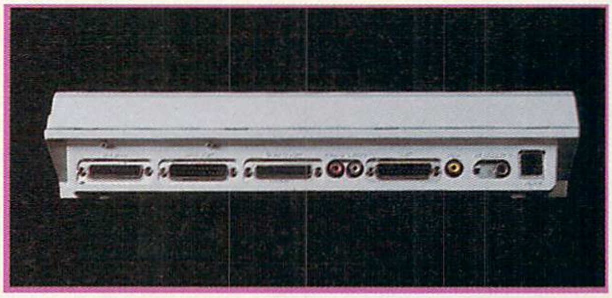
A Twice-Told Tale

Beginning in September, Commodore plans to sell two versions of the A600, one based on floppies ($499.99) and another with a built-in 40MB hard drive ($749.99). (NB: prices and availability dates are subject to change.) The hard-drive version uses an IDE, rather than the more expandable SCSI adapter (onto which you can daisy-chain devices). Commodore's hard drive uses a significant amount of RAM for buffers and so on, making the standard 1MB A600 incapable of running applications that require 1MB of RAM. As a result, the standard configuration for the hard-drive version is 1.5MB.



The right side of the machine conveniently holds mouse and joystick ports, much like the A3000.

Commodore appears to be aiming this machine at the game-system market. The plan is to bundle the computer with hot games—plus some productivity programs—and sell it as a hardware/software combination. The standard floppy version is destined to come packaged with five pieces of software, including two arcade games (Ocean's Robocop 3 and Psygnosis' Shadow of the Beast 3), plus one role-playing adventure (Myth, by System 3). The two productivity titles will be Domark's MicroText word processor and Graphic Workshop paint program.



Despite its small size, the machine contains—as well as composite out—an RF modulator for hooking to a TV.

Buyers of the A600HD will get a software lineup that favors productivity a little more. In addition to the MicroText and Graphic Workshop programs, the hard-drive-equipped version of the computer will come with an easy 3-D authoring/design environment oriented to entertainment applications. The only game per se to be included is Ocean's PushOver, a puzzle-style game.

Of course, given its serious computing abilities, the A600 stands head and shoulders above the more traditional game machines by Nintendo, Sega, and NEC. For first-time users, this small, self-contained A600 should be attractive. Although Commodore has already established availability through dealers and consumer channels, the company has its work cut out for it to develop distribution and awareness of the system.

Should you buy an A600? If you need to cart your system around or have little interest in beefing up your Amiga, it could be ideal. It could also serve as a terrific system for the kids, and neophytes are sure to love the new operating system, which is about as slick as you'll find in any market. But if you like to push the limits of your applications, the lack of expandability should stop you dead in your tracks. Personally I'd like to see this very machine with an '030 or '040 processor, the old A500 expansion bus, and a self-contained power supply. Then this small talk would speak up loud and clear. ■

Amiga 600 Specifications

Price:
- $499.99 floppy based
- $749.99 with 40MB hard drive

CPU: 7.16 68000
RAM: 1MB standard
ROM: 512K
880K-byte internal floppy

Connectors:
- Floppy drive
- Mouse
- Joystick
- RS-232 serial
- Parallel
- PCMCIA

Video:
- RF modulator
- Color composite
- RGB analog

78-key keyboard

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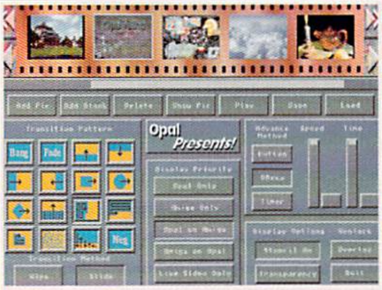


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OpalVision Main Board

- An internal card which operates in any Amiga computer with a video slot. It is the core of the OpalVision system.
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- Capable of double-buffered 24-Bit and 15-Bit animation in medium and low resolution modes and 8-Bit double-buffered animation in all resolutions.
- VLSI graphics coprocessor enables resolution changes, stencil modes, a host of transition effects and smooth scrolling between screens.
- "Palette-Mapped" design updates colors in real-time. Fade pictures in and out and change their palettes on the fly.

Technical Info

- Operates in all Amiga resolutions up to a maximum of 768 by 480 pixels (580 in PAL).
- Double buffered full 24-Bit 15-Bit and 8-Bit true color modes, 24-Bit and 8-Bit palette-mapped display modes, Dual Playfield and Overlay Priority stencil modes.
- Priority mask definition specifies foreground/background areas.
- 20ns video switch to freely mix Amiga and OpalVision graphics.
- Equipped with 1.5 MB of display RAM.
- Expansion connectors for available Framegrabber/Genlock and Scan-Rate Converter hardware modules and expansion socket for the "Roaster Chip."
- Automatically self-configures for NTSC or PAL operation.
- 24-Bit RGB output with video bandwidth >7 MHZ.
- Microcode graphics processor for system control, priority switching, hardware scrolling and panning.

Hardware Requirements

- Any Amiga computer with a video slot.
- Any Amiga compatible monitor capable of 15.75kHz scan rate. (Models 1080, 1084, 1950, 1960 most Multi-Sync/Multi-Scan monitors.)
- One MegaByte of CHIP RAM (Two MegaBytes Recommended)
- Two Megabytes of FAST RAM
- Hard Drive strongly recommended
- 68000/20/30/40 compatible

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Included Software:

Every OpalVision Main Board includes a full range of software to let you start enjoying all the benefits of your new 24-Bit Amiga immediately:

OpalPaint

An unequalled painting and image manipulation program specifically written to take full advantage of the power of OpalVision. It's Fast. Real-time. Full 24-Bit. OpalPaint gives you complete control over OpalVision's 16.8 million color palette. Includes a full-range of drawing tools and an expandable library of image-processing modes with adjustable parameters, full texture-mapping capabilities, transparency and color gradients, multiple work modes, nozzle brushes, pre-defined palettes and many pother comprehensive tools. Unique and powerful features like real-world "Artist's tools" and paper types, multiple stencil types, virtual memory support and compatibility with the pressure-sensitive Wacom™ drawing tablet provide a level of support for artistic creativity never before available.

Opal Presents!

A comprehensive icon-driven presentation program offering complete control over OpalVision images, Amiga graphics and live video (when the Genlock and Framegrabber is installed.) Includes numerous built-in transitions and effects including wipes, fades and scrolling effects. Takes full advantage of OpalVision's double buffering and intelligent image pre-loading to minimize delays. Utilizes 24-Bit image thumbnails in both editor and file requester. Trigger transitions by mouse button, timer or AREXX commands. Initiates CLI and AREXX scripts. Fully multitasking.

OpalVision HotKey

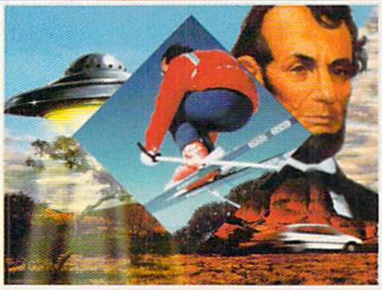
Display OpalVision images anytime by using key combinations. Show OpalVision and Amiga graphics simultaneously, with single keystrokes to control two different OpalVision screens, priority masks, and other OpalVision features. Multitasks with all Amiga software to provide 24-Bit backdrops for Amiga graphics. AREXX compatibility integrates all OpalVision features into the Amiga environment.

King of Karate

Just for fun, we're including the world's first 24-Bit personal computer game with every Main Board! An exciting, two-player karate competition which is lots of fun and an excellent demonstration of OpalVision's capabilities. Includes music and sound effects.



OPALPAINT's exclusive real-world Artist's Tools and paper types bring a new level of artistic creativity to the Amiga.



OPAL PRESENTS! includes numerous built-in transitions for image sequencing and presentation. It also triggers CLI and AREXX commands.



Just for fun we've included KING OF KARATE - An exciting, two-player, 24-Bit karate competition with music and sound effects.

The OpalVision Main Board is only part of the story:

The OpalVision Main Board is the foundation of a complete OpalVision 24-Bit graphics and video system. OpalVision Enhancement Modules are on the way which add exceptional graphic and video features to the OpalVision Main Board. Add 24-Bit, real-time framegrabbing and genlocking with S-Video and composite inputs and outputs. Expand your system even more by adding the OpalVision Production Switcher and "Roaster Chip" for amazing Digital Video Effects and video switching capabilities. Install our De-Interlacer for flicker-free output. The expansion modules connect directly to the OpalVision Main Board without tying up Amiga slots.

Upcoming OpalVision Enhancement Modules:

Frame Grabber/Genlock Module
Quad-input Production Switcher
Scan-Rate Converter (de-interlacer)
OpalVision Roaster Chip

The expandable, modular design lets you select only the features you need while providing expandability so you can add additional capabilities as you require them.

The OpalVision system is an excellent video processing and manipulation tool but unlike other video-only systems, it integrates extremely well into the Amiga environment and functions superlatively for applications like desktop publishing, ray-tracing, image processing, multimedia and entertainment. OpalVision is the complete 24-Bit system which upgrades all of your Amiga's capabilities to true, uncompromised, 24-Bit RGB.

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VIDEO



SUITE

Picture Perfect

How can you be sure your video signal measures up?

Measure your video signals!

By Joel Tessler

BACK IN 1978, I shot and edited my first color commercial. I submitted the spot to the local NBC affiliate, only to find out it was not suitable for broadcasting. Why? Because the video signal did not comply with FCC standards. I had to reshoot and edit the entire commercial and actually lost money on the project, so I vowed that I would never again shoot or edit without using a waveform monitor to check my signal.

Although color cameras have improved tenfold and the signal-to-noise and frame accuracy of VCRs have come a long way since then, I still get calls from clients having video trouble, some of which could be avoided by properly measuring the video signals with a waveform monitor and vectorscope.

The advent of NewTek's Video Toaster has made video-signal monitoring critical in desktop environments. With the addition of a dual-channel time-base corrector (TBC) and its ability to adjust color saturation, hue, gain, setup, and other parameters that affect the video signal, things can get pretty complex.

While blindly making adjustments can worsen problems, a waveform and vectorscope help you determine how the signal is affected and enable you to achieve higher quality output. Combination waveform monitor/vectorscope units are fortunately now available at a fraction of what they cost in the 1970s. Two companies—***Magni Systems*** and ***Digital Processing Systems*** (DPS)—have recently broken ground with new, inexpensive waveform/vector combos. Both models output video information to a standard composite monitor, obviating the need for expensive CRTs (those high-resolution rack-mounted green screens seen in TV stations). This means that the rest of us can afford to measure our own video just like the networks.

I used a Video Toaster A/B roll editing system to evaluate both units, and compared them to high-end waveform/vectorscopes set for accuracy. *(To locate the vendors of the products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 98.)*

The Magni Monitor

Magni Systems, well known in the video industry for its high-quality test gear, offers a $1795 waveform/vector combo that fits into a low-profile, 19-inch rackmounted unit. The unit provides scores of features and the kind of flexibility required by complex post-production facilities, TV and cable stations, and even transmitter sites.

The **Magni Monitor**'s hardware is composed of a 19-inch, rack-wide mountable base unit, a remote control, a four-inch LCD display, and a separate power supply. The base has a green LED lamp power indicator on the front panel. The rear panel has four telco connectors (the type that are on your telephone): two for remote use, one for the Magni LCD monitor, and the other for picture. It also accommodates ten British Nut Connectors (BNCs): one for waveform, another for picture, and two each for reference and channels A, B, and C. You can use the connectors in various ways to fit your studio's needs.

Those new to video may experience "feature shock" when using a waveform/vectorscope for the first time. Fortunately, Magni's interface includes a friendly on-screen menu that displays its output to both an LCD screen and a composite monitor.

You access this menu via the handy remote control, which features 15 buttons and a large control knob. On the left side of the remote is the main-menu button, along with six "quick keys" for the most frequently used functions. When you opt for waveform-monitor control, the quick keys correspond to variable gain, 2H/1H (in 2H), FLD1/FLD2 (in 2F) , filters, alarm (on or off), and reference (internal or external). The quick keys for the vectorscope are variable gain (enable or disable), vectors (75% or 100%), normal/+ (PAL) , alarm (on or off), and reference (internal or external).

The remaining nine buttons control channel selection, horizontal line display, field display, horizontal and vertical magnification, and waveform or vector mode (this also controls magnification direction and which function of the knob is active). The knob provides adjustment for horizontal and vertical position, vector phase, and other variables selected from the menus.

To help you manage all these controls, the manual is packed with explanations about video, plenty of operations information, and a great glossary.

Monitoring Performance

The Magni Monitor performed well. Its reference-in allows for timing and phase comparisons in the studio environment, and its vector and waveform graticules are easy to read. Magnified mode gives you a clear picture of the horizontal sync and burst without straining your eyes; in some cases I could read a signal from clear across ►

All photographs are of actual DCTV screens.

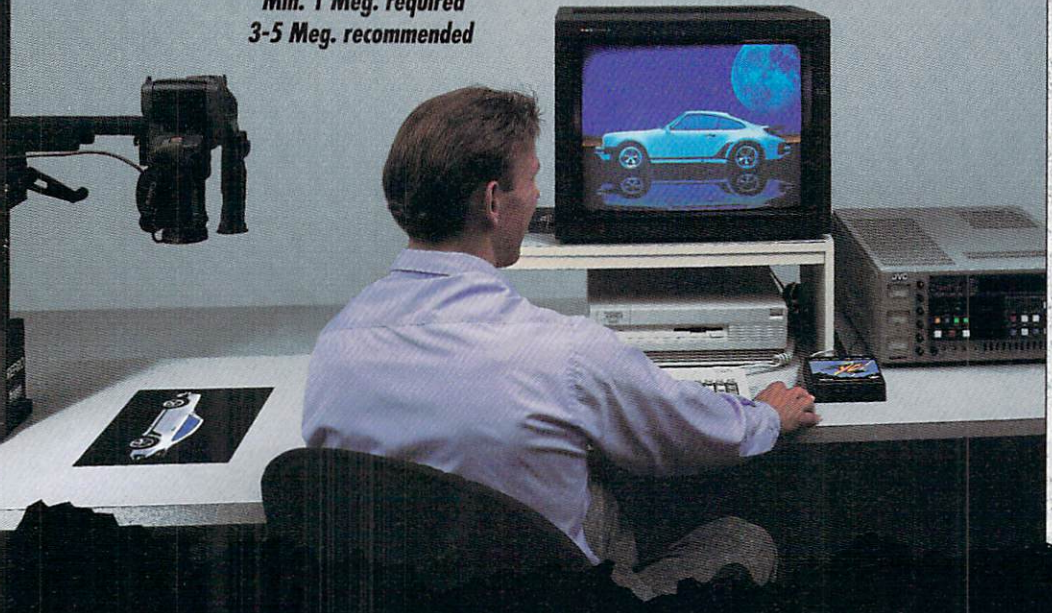
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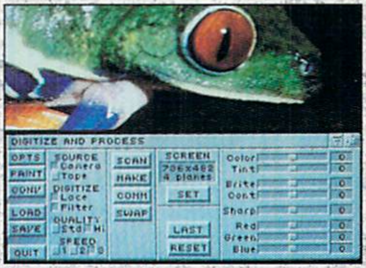
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the room. The remote-control unit makes it easy to access menus and features. The buttons have a good feel, and the control knob is solid.

In the edit suite, I was able to check my phasing, timing, black levels, sync, and blanking, and to make sure my video levels were correct without having to fight the hardware.

The Magni Monitor's multichannel input lets you monitor up to three separate channels of composite or component video. It also allows you to color-code all three channels on screen. With the wide acceptance of high-band Betacam, M-II, Hi8, and SVHS formats, this is a feature whose time has come. The ability to view Y, B-Y, R-Y, or Y/C is not far short of nirvana for me.

The Magni Monitor also supports another important feature: color-frame monitoring. This lets you compare channel C with A or B, for instance, on the vectorscope. One problem with composite waveform/vectorscopes is the brightness levels of the various display elements. Magni's solution is a feature that allows for separate selectable color and intensity for backgrounds, graticules, waveforms, and variable persistence. Another nice feature is the alarm, which sounds a warning if the timing or SC/H phase exceeds the set limits.

Remote-signal monitoring is also possible with the Magni Monitor. This means you could leave a modem-connected base unit at a cable station's head end ten miles from the main studios. Then, a cable operator could use a modem-connected remote at the main studios to control the base unit and monitor the head-end signals!

Even aside from all the extras, the Magni Monitor fares well as a general-purpose video-measurement instrument. Unless you're a diehard who will accept nothing less than the most extreme high-resolution CRT and a zillion magnification modes, the Magni Monitor can probably fit your application.

The Personal V-Scope

Digital Processing Systems was the first manufacturer to introduce a TBC on a single card. Now the company has managed to combine a waveform monitor and vectorscope on a card that outputs its signal to a standard composite monitor. This unit does not require a rack-mounted unit or external power supply; it was clearly designed with desktop video in mind.

DPS's **Personal V-Scope** ($995) plugs into one of the A2000's or A3000's IBM slots. After inserting the board, you must make some internal or external serial connections to use the supplied control software. The back of the card has a serial data-input telco connector, a BNC NTSC video input, an LED video indicator, a buffered-video output, a superimpose output, and a full-time output.

The software gets to your hard drive through an automatic installation program that's easy to use. The software-control menu lets you select waveform, vector, overlay, split screen, flat or lowpass, 1H/2H waveform, superimpose, trace, trace freeze, variable-trace-rate, and variable-trace-value modes. A full-featured software-based test-signal generator (TSG) is also included.

Personal Use

What stands out the most about this system is its simplicity and ease of use. The interface works on a what-you-click-is-what-you-get system, without the confusion of bothersome pull-down menus. The split-screen mode allows for simultaneous composite display of the vectorscope and waveform monitor over incoming video, graphics, or both.

When displaying the V-Scope's full-field color bars from the Video Toaster's framebuffer, I could see that all the colors registered inside the vectorscope's boxes, indicating phase accuracy. The waveform monitor showed the individual parts of the color-bar signal.

If you already own DPS's Personal TBC, integration with the Personal V-Scope is automatic. A separate V-Scope menu that's built into the TBC software lets you adjust the TBC's parameters on the fly and immediately see the results on the V-Scope's display. One of the most obvious advantages I noticed while editing was the size of the waveform/vector display. Even with a 13-inch monitor, it gave a pretty clear picture of what was going on with the video signal. (Both the V-Scope and Magni Monitor also appear to be compatible with I.DEN's TBC Card and Digital Creations' Kitchen Sync.)

In the edit suite, the V-Scope performed well, although the lack of an external reference-in limited my ability to do comparisons. Still, I was able to gain some crucial information regarding phasing and timing of the source VCRs.

The TSG software works directly with the Video Toaster's framebuffer and in conjunction with the V-Scope. It includes 32 industry-standard test patterns that install automatically through an easy-to-use utility. Each test pattern is coded in the manual with a number and an explanation of its usage. Some of the uses for the test signals are picture monitor alignment, video levels, differential phase/gain, Y/C delay, and frequency response.

While normally expensive, TSGs are necessary for getting a complete picture of all the variables in the video signal. I found the TSG software a great alternative to traditional test generators; the multiburst 100-IRE test pattern gave a clear picture of the frequency response rates of three TBCs.

The V-Scope's manual explains its usage in clear, concise language, and it provides plenty of details on video measuring. With all its technical information, however, it still manages to address the needs of the novice. The explanations of the test signals in chapter 6 is in itself a short course in video. In addition to text, the manual has an ample amount of pictorial content.

I would like to see an external reference video-in built into the Personal V-Scope, and more magnification for horizontal sync and burst. But even with these limitations, the board is a great buy, what with its versatility, the dual display and the TSG software. You simply will not get this range of features elsewhere without spending more.

To Measure or Not?

Maybe you have heard that you don't need to monitor your signals if you are not doing broadcast video. Bullfeathers! In some cases, nonbroadcast video is a higher risk for trouble down the line. Combining video on tape with electronically generated graphics can introduce all kinds of problems, and without monitoring equipment, you are operating in the dark. You may not be able to detect a 20% loss in your video signal just by looking at your composite monitor, but by the time you get down to the fourth generation, you will be lucky if even 40% of your original video signal is there.

If you are serious about video, you should consider buying a waveform monitor and vectorscope at some point. Hopefully, you'll do it before you have a major catastrophe.

While the Magni Monitor is better suited for more complex post-production work, cable head ends, transmission sites, and so on, either of these products will make a big difference in any video studio. ■

Joel Tessler works as a video and animation consultant to cable stations and networks, both nationally and internationally. Write to him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

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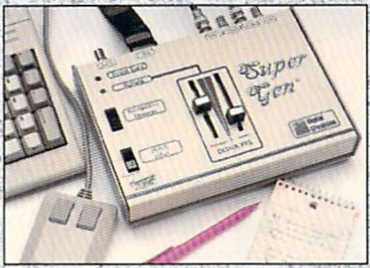


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ACCENT ON GRAPHICS

"Mining" for Backgrounds

44

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

ANYONE WHO USES the Amiga for creating video titles, business graphics, or multimedia screens soon finds a need for lots of rich, unobtrusive backgrounds. A good background adds color and style to a text, button, or information screen without competing for the user's attention. Marble and stone textures are popular, but tend to be overused.

This column will focus on easy image-processing methods you can use to explore existing pictures, mining them for small areas that can be enlarged to serve as soft-focus backgrounds in 16-color hi-res, HAM, or 24-bit color. *(To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 98.)*

ENLARGING YOUR OPTIONS

The idea is simple. Examine any Amiga picture in your files for small rectangular areas that would be interesting abstract images if enlarged. If you don't already have experience in enlarging brushes in a paint program, try cutting a brush in **DeluxePaint** (***Electronic Arts***) and press Shift-H a few times—doubling it again and again. Immediately, however, you will notice a problem. The individual pixels are blown up so that the enlarged image is a blocky mosaic, not at all suitable as an unobtrusive background.

Imagemaster (***Black Belt Systems***) has interesting features that allow you to enlarge a small section of an image without producing large, blocky pixels. It does this through pixel-interpolation techniques. As a small image is remapped into a larger area, new pixels are calculated and introduced—producing an effect that makes the image look more like a resolution-independent photographic blowup. The soft, blurred version of the original region is perfect for backgrounds, and you can save it at any resolution. This technique is highly effective in producing smooth 24-bit files, but it is also superb for HAM and 16-color hi-res.

Using this process can prove very beneficial in video work, because many Amiga video artists lack 24-bit color capability—relying instead on the high-resolution native Amiga mode for crisp text and titles. It would be virtually impossible to hand paint the hi-res, 16-color soft-focus backgrounds that you can create through enlargement enhanced by Imagemaster's sophisticated interpolation and dithering.

To try the technique, load any Amiga picture into Imagemaster. Press the Process Panel button, then select Resizing and Clipping. Choose Stretch Clip, then Rectangular Area. Drag a box around a one- or two-inch region of the screen you wish to enlarge. The program will present you with an interface that lets you adjust the scale. Peg the X and Y sliders at +100 or enter higher values manually. To conserve memory, select Replace Primary from the buffer-allocation screen that pops up. An enlarged version of your clip will be rendered to the screen in whatever resolution you have selected in the Display Panel.

The image will have a softer look to it than if you had simply enlarged the pixels, but it is not as smooth as it can become. One way to get a smoother image is to mine deeper into the new screen image. Select a small rectangular area again, and repeat the previous steps. Descending two or three levels into any image will yield a very smooth gradation of colors within an interesting composition of soft-edged, organic shapes. The process is reminiscent of delving deeper and deeper into a Mandelbrot set in search of interesting form.

If you have the composition you want at the first level of enlargement, but not the total soft-focus effect you seek, try blurring it. Press the Process Panel button, then select Geometric Transformations. Try the Spiral Blur. You will be asked to define an area of the image. One of Imagemaster's great strengths is its ability to let you define a limited area for any operation. In this

Simple image-processing techniques can yield some real gems when you need interesting backgrounds for almost any type of presentation.

case, however, select Entire Image. You will then be offered a choice of Inwards or Outwards spiral and a numeric setting for the extent of the effect.

The illustration accompanying this column shows an Outwards spiral at level 10. The image will be processed and rendered to the screen in soft focus. Save the result by "Rendering To File" at whatever settings you choose. The illustration was rendered as interlaced HAM using a dual-random F-S dither.

More Mining Nuggets

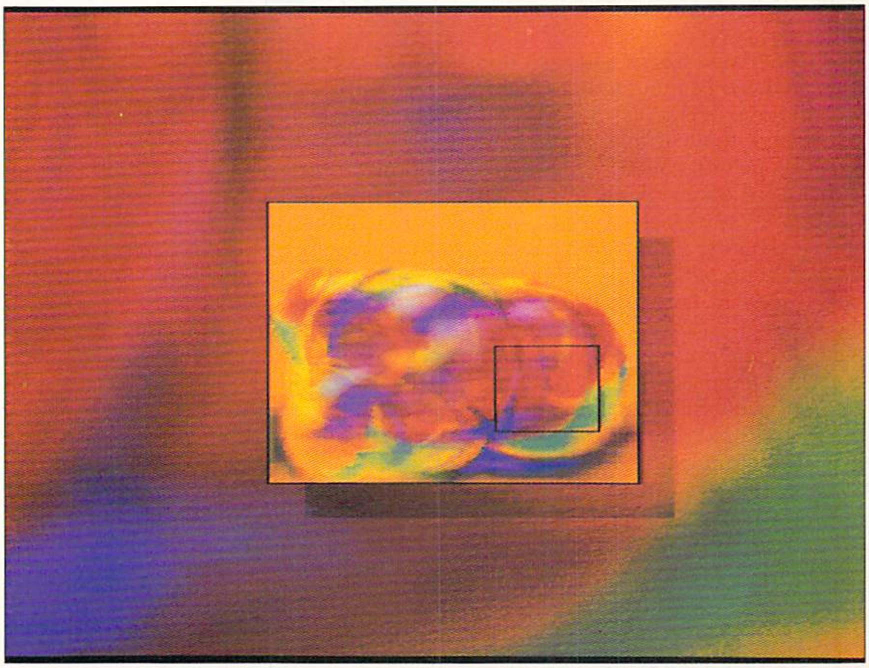
Another way you can smoothly enlarge in Imagemaster is by linear composition. Load the original image again and select Process Panel, then Resizing and Clipping. This time choose Clip Region, then Rectangular Area. When presented with a buffer selection, choose New As Secondary—Hold Primary. This preserves the buffer area of your original image as a rendering space. Press the Compose button, then Linear Compositions. Next, choose Place With Anti-Alias and Entire Region. The soft-focus enlargement will render to the screen. Mine for small regions in two or three steps for cumulative smoothing.

A dramatic example of the usefulness of this technique is to apply it to high-resolution photographic images such as the NASA Mars photos in ***Virtual Reality Laboratories*' Space Disks** series. For a presentation, I can create a zoom on a crater in the Nilosyrtis image that would otherwise be a useless pixel blowup. You have to make this sort of comparison yourself to really appreciate the dramatic difference.

Experiment with other methods of producing soft-focus backgrounds. If you are using **DCTV** (***Digital Creations***), try turning on Smooth Clips in the Options Panel. Clip a small area of an image, press the Size gadget, and then drag the clip out to full screen. Mine smaller regions of this image one or two times, and you should come up with some great backgrounds. In **Art Department Professional** (*ASDG*), you can quickly create smooth backgrounds by selecting Backdrop from the Load requester, adjusting the four corner colors, and then executing a render.

The sophisticated dithering in Imagemaster and AD Pro is the key to rendering smooth screens, even when you limit yourself to 16 colors. Experiment with dither on and off to see the amazing difference. If you have a 24-bit display or an enhanced color device like DCTV or **HAM-E** (***Black Belt Systems***), the methods outlined here yield superb results that can be a good visual break from standard marble backgrounds. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.



The soft background in the illustration above is an enlargement of the area in the black box on the inset HAM image. Techniques in Imagemaster prevented the usual look of blocky pixels that one associates with an enlarged bitmap.

From p. 24.

ence is an optical positioning track that is burned into the media with a laser, allowing much more precise positioning of the read/write heads. Although they store as much as small hard drives, these disks use basically the same media as high-density floppies, meaning that they can't match hard-drive speeds and are subject to the same media failures as ordinary floppies.

No Bigger Than a Bread Box

Both of these drives come in internal and external versions. The internal floptical is the same size as a normal floppy drive and can be mounted in either the second floppy drive bay of an A2000 or A3000 or, with the proper mounting kit, in an A2000's or A3000T's $5\frac{1}{4}$-inch bay.

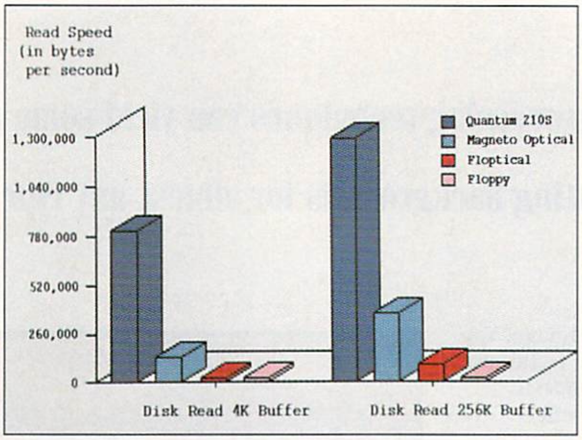
As for the optical drive, it is the same width as a $3\frac{1}{2}$-inch floppy, but about $\frac{3}{8}$ of an inch taller, so that it can be mounted only in an A2000's or A3000T's $5\frac{1}{4}$-inch drive bay. For each drive, I tested the external versions, which come complete with metal case, power supply, and fan. The external floptical measures $5\times7\frac{1}{2}\times2\frac{1}{2}$ inches, while the external optical drive is roughly the size and shape of a one-pound loaf of bread.

The hardware and software installation procedures are exactly the same as for any other SCSI hard drive, and a push-button switch makes it easy to set the SCSI drive ID number. Unfortunately, this switch was unplugged on the floptical I tested, so the ID remained at zero, at any setting selected. However, DMI technical support quickly solved the problem.

DMI does not include any formatting software, because such software comes with the required SCSI host controller. The company states that the drives were tested and work well with SCSI controllers from Commodore, Great Valley Products, Interactive Video Systems, ICD, Supra, Xetec, Nexus, and Expansion Systems. The manual does, however, provide illustrated step-by-step instructions for low-level formatting and partitioning of the drive using Commodore's HDToolBox program. Although it isn't mentioned anywhere in DMI's or Commodore's manuals, you can use HDToolBox with other controllers, as long as they follow the Rigid Disk Block standard.

DMI states that you must low-level format the disks before use, but this step doesn't perform any useful function with SCSI devices. In fact, I performed a low-level format on a floptical disk, rebooted, and found all of my data still intact.

Removable media drives have some properties that are different from fixed hard drives. Most SCSI controllers allow you to remove and replace disks during a single session, just as you do with a floppy drive, as long as the disks are all partitioned exactly the same way. Although the DMI manual states that automatic disk-change recognition requires AmigaDOS 2.0, it actually depends entirely on the SCSI controller. Most of them support removable-media drives, but older boards may require an updated EPROM chip.



A speed comparison of a conventional hard drive, the floptical, the magneto-optical, and a floppy drive.

You can boot from removable drives, but if you plan to use them as your only hard drive, you'll have to include the Workbench files on every disk. A better plan is to have a small, fixed hard drive for your Workbench volume and use the removable-media drives to expand your storage capabilities.

Removable-media drives are also handy for backing up large, conventional hard drives (five or six flopticals or one optical vs. over 100 floppies for a 105MB hard drive). For this reason, DMI includes a copy of Quarterback 4.3 with the floptical. Removable-media drives can also provide inexpensive hard-drive storage for emulators. Once you have removable-media, you can add IBM or Macintosh hard-drive capability for the price of a new disk and some driver software.

Although DMI's documentation fails to mention it, the floptical drive has another very important capability. With Consultron's CrossDOS file system, it can read and write ordinary 720K or 1.44MB IBM floppy disks. That makes it the only Amiga drive currently available that you can use to transport files between an Amiga and a PC using standard high-density $3\frac{1}{2}$-inch disks, or between an Amiga and a Mac using the proper software drivers. Unfortunately, because of its rigid orientation towards IBM floppies, the floptical is not able to read and write normal 880K Amiga floppies.

Don't Judge a Disk by Its Case

With respect to its operation, the floptical drive is a lot like a giant floppy—it even makes the same noises. Flopticals, however, in addition to storing over 20 times the data of a regular floppy, are three to five times faster. Because the media is very similar to that of a regular floppy, it shares both its relative's advantages and disadvantages. The disks are easily stored and transported and require no special handling, but they are subject to the same surface defects as regular floppies. Of the three disks I used, one failed completely after a few days (DMI promptly replaced it) and another developed read/write errors (I mapped them out and lost only 20K or so of storage).

In time, the disk reliability of these devices should increase, and prices (currently \$20 each) should diminish. By the time you read this, 3M and Maxell are both expected to ship floptical disks, and they predict that prices will fall to under \$10 within a few months, bringing the cost per megabyte of storage to under 50 cents. Based as it is on very inexpensive floppy technology, the floptical drive could well become one of the most cost-effective and convenient mass-storage options.

The optical drive sits at the other end of the removable-media spectrum. It is among the fastest, highest-capacity, and most expensive of these drives. Although the initial cost of the $3\frac{1}{2}$-inch optical drive is three times that of the floptical, it is nowhere nearly as high as the price of the $5\frac{1}{4}$-inch optical units, which run over \$3000. Moreover, the incremental cost per megabyte of storage is very low, as each 121MB cartridge costs only about \$70. If you plan to eventually store more than a gigabyte of data, the total cost of the drive and media is less than that of a conventional removable drive such as Syquest's. If you plan to store three or four gigabytes, the cost will be half.

Like the floptical drive, the optical unit uses disks that are about the same ►

size as a regular $3^1/_2$-inch floppy, and they come in a durable plastic shell, making them easy to store and transport. Because they use optical media, however, they should be even more reliable; I experienced no problems during my tests. Although the performance of the drive wasn't super-fast, neither was it noticeably slow. At three to four times the speed of the floptical drive, the optical unit definitely falls within the range of conventional hard drives.

The floptical and optical drives from DMI are welcome and versatile alternatives to conventional hard drives. Convenient and relatively inexpensive, the floptical drive is a natural for backups, can double as a hard drive, and can triple as an IBM-compatible drive. Quick, quiet, and reliable, the optical drive holds large amounts of data on small disks that are easily transported.

—Sheldon Leemon

MIGRAPH OCR 1.11B

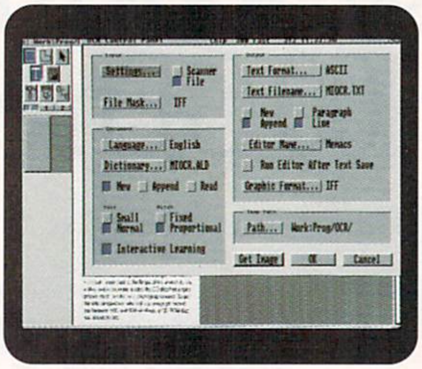
Migraph, $299

Hard-drive installable.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 2.5MB or 4MB (for flat-bed scanner) RAM, hard disk.
Recommended system: 4MB RAM, hard disk, accelerator.

Converts scanned documents to editable text files.

A main complaint about the Amiga is that it lacks business applications. Migraph OCR is quieting the critics by adding a new business option—optical character recognition (OCR). The basic idea behind OCR is for a computer to convert the information from a scanned document into text for editing or reformatting. This is very useful for inputting large amounts of printed text, such as typed forms or spreadsheet data.

A prerequisite for OCR software is the ability to accept scanned documents. Migraph OCR directly supports Migraph, AlfaData, and Golden Image hand scanners and will load previously scanned files saved in IFF, TIFF, or IMG (Atari) formats. The scanner interface includes selections for 100, 200, 300, or 400 dpi (dots per inch), scan length, units of measure (inch/centimeter), and portrait or landscape orientation.



Migraph OCR lets you set parameters for analyzing the input document.

The indexed manual provides suggestions on methods of using hand-held scanners so as to achieve optimum results. These are quite welcome, as Migraph OCR has no way of seaming together the several passes required by hand scanners; you must process each pass as individual input. You can, however, append one completed ASCII text file to another, thus creating a complete file of your document.

LEARN YOUR ABCs

A major feature for OCR software is the ability to recognize and learn new type faces and styles. For character recognition, Migraph OCR uses Omnifont technology, the current state of the art, which identifies characters by matching mathematical patterns. The software comes pretrained with Artisan, Bookman, Brougham, Caroll Pica, Courier, Courier Italic, Delegate, Elite Modern, Helvetica, Herald Elite, Letter Gothic, Lori, Lubalin, OCRB, Pica, Prestige Elite, Prestige Italic, Prestige Pica, Times, Titan, and Title. Notably missing are the typefaces that round out the standard 35 Adobe Postscript fonts, such as Palatino and ZapfChancery, although my tests found the recognition level with Palatino quite good.

Migraph OCR allows you to analyze the document interactively or automatically. Interactive mode displays unrecognized characters. You then confirm the guess, delete whatever is incorrect, and enter the proper characters; or you train the software via the mouse or function keys. The training option stores the pattern in a dictionary that the program can use later on with similar documents. (Migraph suggests that you create new dictionaries for each type of document you regularly encounter.)

The learning process of Migraph OCR is good, and, following training, the program's accuracy is excellent. Migraph OCR also automatically starts the text editor of your choice when the conversion is complete, and it lets you save your preferences for the editor, text file,and dictionary.

Migraph OCR provides tools (rectangle and polyline) for defining the areas on a document that should be analyzed and lets you designate them as text or graphic. Only the text areas are converted to text. For irregular shapes, you can use polyline or multiple rectangles; the program automatically combines the shapes. The areas are analyzed in the order created, and you must define each column of a multicolumn document in the right order. If necessary, however, you can reorder the areas and modify their sizes.

Unfortunately, the areas cannot be saved and used on documents with a similar format in a later session. Nor is there an ARexx port or any other means to batch multiple documents.

The program provides three zoom levels (full page, 100%, and 200%) and an icon locator for easy movement on the page. While this is helpful, 100% and 200% are still too close if you scan your document at the recommended 300 dpi.

LINGUISTIC LEXICONS

Migraph OCR can recognize proportional or monospaced American and European character sets. Lexicons for English, French, German, and Dutch are also included to assist in character recognition. The program can deal with some italic fonts, but slows down in the process. It also works reliably only on font sizes of 10–18 points. The company claims that it can handle smaller sizes scanned at 400 dpi, but my results with this were poor.

Overall, Migraph OCR is generally accurate and fast at what it does. However, current state-of-the-art OCR software automatically distinguishes between text and graphics; handles multiple columns; retains formatting (bold, columns, italics) in the output document; has the ability to save the graphic areas; provides better controls over scanning (such as contrast); batch processes in automatic mode; and saves text in popular word-processing and database formats. These are the areas that make the idea of OCR very appealing in business. While such features are not yet available on the Amiga, I hope that Migraph keeps up the good work and adds more to their offering.

—Steven Blaize ►

Scriptgen

Michael Greenstein, **$49.95**

Hard-drive installable.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: Video Toaster system, ARexx.
Recommended system: Same.

Basic slide-show creation.

TRexx Professional

KludgeCode Software, **$129.95**

ToastMaster

Byrd's Eye Software, **$149.95.**

Toaster Toolkit

The Byte Factory, **$150**

Hard-drive installable.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: Video Toaster system, ARexx.
Recommended system: Same.

Remote control of Toaster features.

If you've avoided learning to control NewTek's Video Toaster with ARexx, relax! ScriptGen, Toaster Toolkit, ToastMaster, and TRexx Pro create such scripts automatically, even for Toaster 2.0.

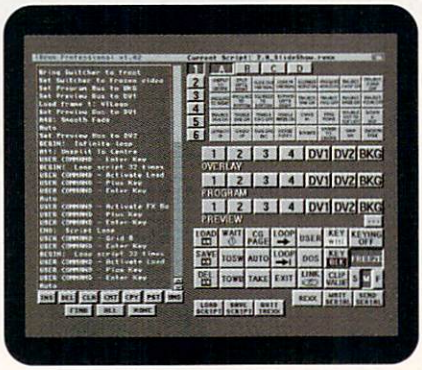
A no-frills utility, Scriptgen builds basic slide shows from framestores, ToasterCG pages, and the Switcher's wipes. It asks you a series of questions, then compiles an ARexx script using the answers. You can request each framestore, keyframe (CG), or overlaid CG page to appear on screen automatically at one of three standard Switcher speeds or a GPI trigger command, and to display for a specified time. Command default settings speed up the process, but I wish they were user-definable. You can play the resulting standard ARexx scripts from a CLI or the Toaster.remote utility. Although it does not allow access to most of the Switcher's features, Scriptgen is easy to use and industrious enough for most jobs.

The remaining three programs share a similar look and feel. A graphical interface represents the Switcher screen, and you click on the appropriate buttons to generate script commands. A separate window displays the script for editing.

Including English translations of the ARexx commands in its large script window, TRexx Professional has the best interface of the bunch. You can cut, copy, paste, insert, and delete among six active scripts, and even preview the results. Scripts can access ToasterPaint, LightWave, ToasterCG, the serial port, AmigaDOS, and Workbench. The buttons are large and well arranged, and the script-creation procedure is simple.

ToastMaster opens a screen onto Workbench, setting its own color scheme but inheriting Workbench's resolution. (Reading the Switcher simulation buttons in interlace mode is tough.) The layout is not very well thought out: The script window is too small; editing takes place either within the program or in a separate text editor (which is not hot-linked to the active script window); and controls are split between buttons and menus. Unlike the other programs, however, ToastMaster offers full control of the Toaster's genlock utility and lets you create and insert Custom FX, short sequences that are treated as one command, into a script.

The Toaster Toolkit is a collection of three utilities: Toaster Sequence Editor, Toaster Project Editor, and Framestore Compressor. The last is self-explanatory; however, when I tried to compress directories with more than 50 files, I received checksum errors and corrupted files. The Project Editor allows you to rearrange and delete effects from Toaster Projects, alter their speeds, and customize each Project to your work style. Smaller Projects load faster and take up less RAM. Toaster Sequence Editor (TSE) has all the features necessary to control the Toaster, generating scripts in either ARexx or TSE's compressed format. Unfortunately, you can load only TSE-format scripts. Screen and button design is comfortable, but the script window is quite small, showing only eight lines.



TRexx Professional creates ARexx scripts for the Video Toaster and translates them for you.

All four of these programs perform as promised. For straightforward jobs, Scriptgen is a quick and easy solution, but for more complex projects that require control of many Toaster aspects, the winner is TRexx Professional. Its easy-to-use interface, script display, and editing features edge out the others by a nose.

—Michael Hanish

Transporter

Amazing Computers, **$249.95**

Hard-drive installable.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 1MB RAM, two floppy drives.
Recommended system: 3MB of RAM, hard drive.

Graphic format conversion and single framing to tape.

If you're tired of such repetitive graphics operations as converting formats, saving single frames to tape, and grabbing multiple screens, Transporter brings the cure—automation. Working with most of the popular graphic software, display devices, and single-frame controllers, Transporter allows you to get the most out of your equipment with the least effort.

To set up Transporter, you must edit a config file, which tells the program the type of single-frame controller you're using, the initialization string, where to send converted files, and the serial-port settings. Should your system change, you can later update the file within Transporter. The small but well-written manual answers most questions.

Going Through the Changes

The heart of Transporter is its script screen. This scripting interface is the basis for all conversions and image manipulation performed, and it makes the program simple to use. You call up the directory you want and click on the files (or range of files) you wish to transport; then choose the function you want (file conversion, animation disassembly, single-frame animation to tape, and so on), and click on accept.

Changing large numbers of files from one graphics format to another is a breeze. The program provides several different conversion programs, including RGB to DCTV, Framestore to RGB, Sculpt 4D to IFF, RGB to HAM, RGB to embossed, RGB to line art, RGB to JPEG, and JPEG to RGB. Transporter is also compatible with ARexx programs, so ►

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Quicknet.

A combination **hardware/software ethernet network & 8Mb memory board** for the Amiga. Two years in development, this hardware & software package will take the Amiga into previously untapped areas. Supports **Thick-net & Twisted Pair** with optional **coax** support.

Quicknet is 'peer to peer', meaning that any peripheral on any computer on the network, is accessible by any other. It is fast & completely transparent to the user.The software is in ROM allowing the Amiga to boot off the network. **Quicknet** software is 1.3 & 2.0 compatible and runs as a background task. **The Quicknet package is $399** and includes everything needed to get you up and running.

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Crystal Sound - superb hi performance 8bit digitizer. Twin ultrafast, low noise converters for up to 70KHz in stereo. Crystal locked for jitter free sampling. **$99**

Midi Express - MIDI interface (4 out, 1 in, 1 thru) with pass thru. **$49** (see Aug A/World for info on above 3)

EPROM PROGRAMMER

This compact unit plugs into the parallel port of the Amiga and programs Amiga compatible EPROM's, allowing you to customise your operating system or backup your existing one. Price $69. An optional pod to program just about any EPROM is $25. Amiga compatible 40 pin Eprom's $30.

KICKMAGIC

A triple rom, software programmable rom switcher that is battery backed and powers up with the last used operating system. Up to FOUR versions of the operating system can be installed. **Price $59. Limited bundle deal - KM + Eprom programmer $99**

Kick2 - two rom sockets, hardware switched $29.

TOP CHIP

Two Meg of chip RAM for your A500/2000. This supersmall unit includes 2Mb of memory that can later be used on The Fast Lane. **Price $199.**

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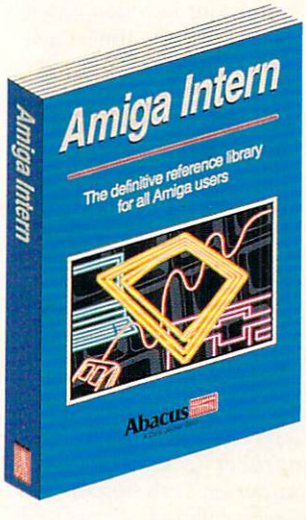
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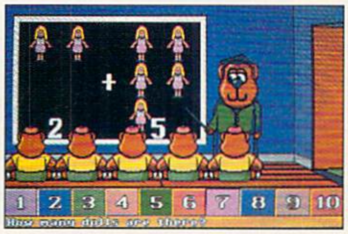
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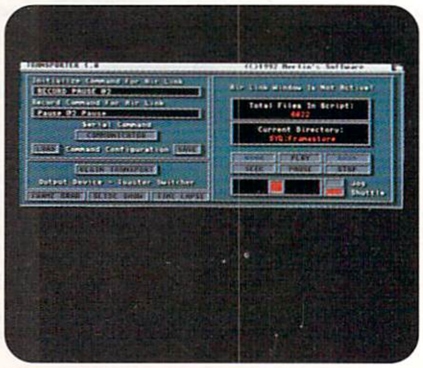
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you can design your own conversions.

The program supports both Video Toaster (NewTek) displays, DCTV (Digital Creations), Firecracker24 (Impulse), Impact-Vision 24 (GVP), Colorburst (Centaur Software), and HAM-E (Black Belt Systems). In addition, version 1.1 promises support for Digital Micronics' Resolver, INOVAtronics' AVideo24, Centaur's OpalVision, and Amiga Centre Scotland's Harlequin. You can easily convert most files; just run your display device or software (such as ASDG's Art Department Professional or Black Belt's Image Master) in the background, press Amiga-M to send it to the back, and start up Transporter. It will take over from there, even numbering the results sequentially.

The Transporter also shines at creating animations from previously rendered frames. Single-framing animations to tape ties up your equipment for long periods of time. With Transporter, you can record your frames to disk and send them to tape later on. Using the script screen, you can loop, reverse, and repeat any number of frames. This means no complicated commands created in a text editor or editing together different parts of an animation.



Transporter's editing screen controls framegrabbing, time-lapse photography, and single-frame controllers.

Building or ripping apart an OPT-5 Anim is equally simple, as is single-framing your animation to tape. Simply choose the frames you want to record and in what order, click on the accept gadget and you're off. Transporter supports some of the most popular single-frame controllers, including VLAN (VideoMedia), BCD 2000A and 5000, MINIVAS (Lyon-Lamb), and DQ-TACO (Diaquest). It also supports Geodesic Publications' Air-Link infrared controller, which lets you to use a standard consumer VCR to record your animations to tape. The results are not frame-accurate, but it's a nice feature if you can't afford a frame-accurate VCR.

Grab All You Can

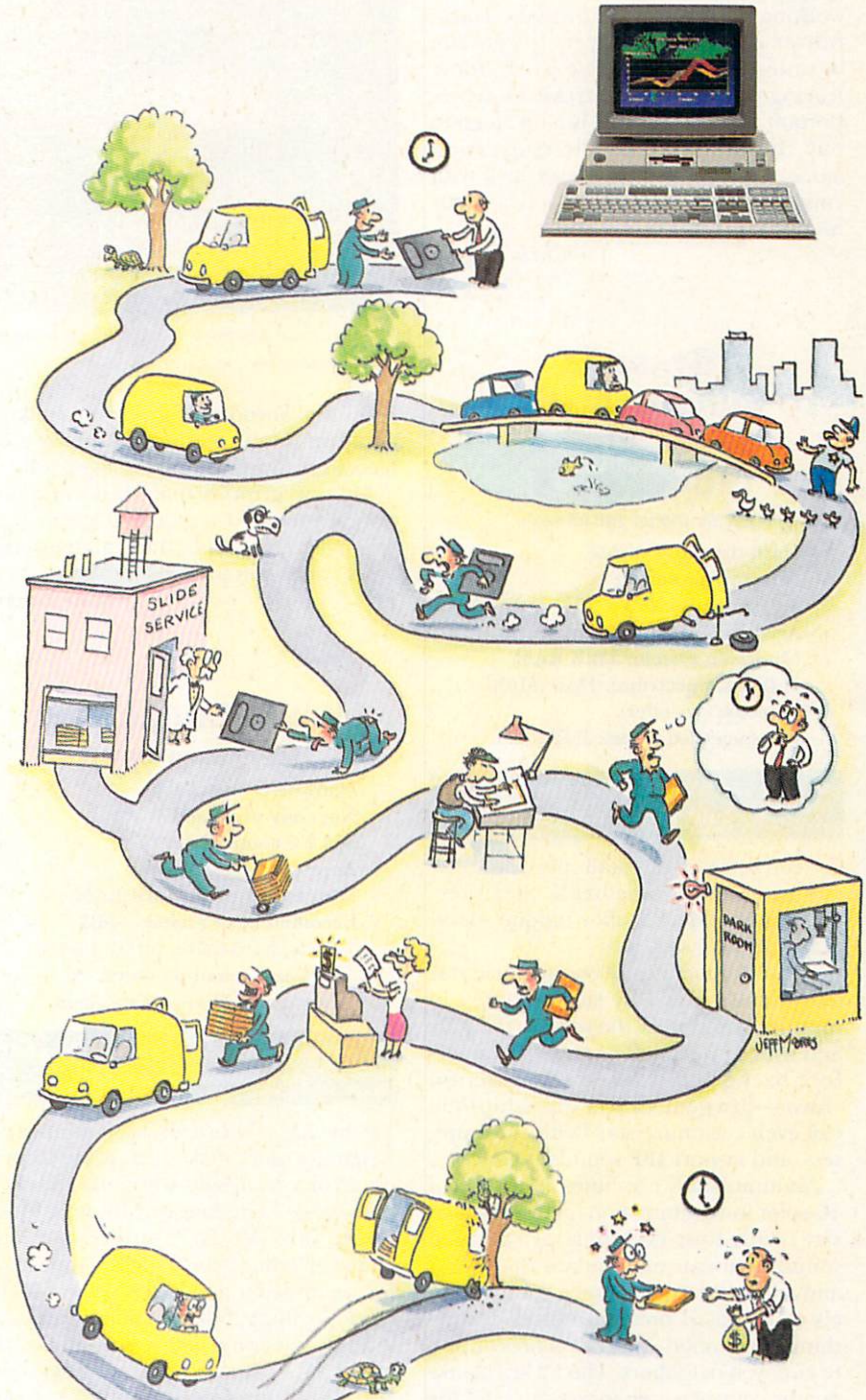
Transporter rounds out its video repertoire with framegrabbing, time-lapse photography, and insert editing. The display shows your in-point, out-point, and current time-code position. You have full control of all tape functions, including play, pause, fast-forward, rewind, shuttle, and jog. Currently, however, your only choices are the Toaster and IV-24. You cannot grab frames from rolling video, so you must have a frame-accurate VCR (or a quality time-base corrector) with the ability to pause on a frame. The results aren't quite as good as real-time grabs, but they're fine if you plan to further manipulate the images.

Unfortunately, I couldn't get my single-frame controller (a BCD-5000) to work with Transporter. Tech support was very helpful—even calling back to see if a suggested remedy had worked—and they claim to use a BCD-2000 with Transporter without a hitch. At press time, they suggested that the culprit might be outdated ROMs in the BCD-5000, but I have yet to test this theory. ►

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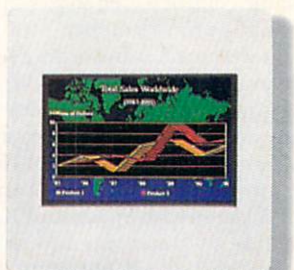
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Circle 24 on Reader Service card.

If you deal with large numbers of graphics images or with other artists working in different file formats, Transporter can be a lifesaver. It gets the brainless, labor-intensive work done, leaving you available to tackle more important tasks. The price is a bit steep to buy the program for file conversion alone, but if you have better luck with your controller than I do, you'll get your money's worth.

—Chris Conroy

StarsFX MultimediaFX SpectrumFX/ VocoderFX

Pacific Digital, $49.95 each.

Hard-drive installable.
Not copy protected.
2.0 compatible.
Accelerator compatible.
Minimum system: 512K RAM (Stars, Spectrum); 1MB (Multimedia, Vocoder).
Recommended system: 2MB RAM.

Audio and visual effects for hobbyists and studios.

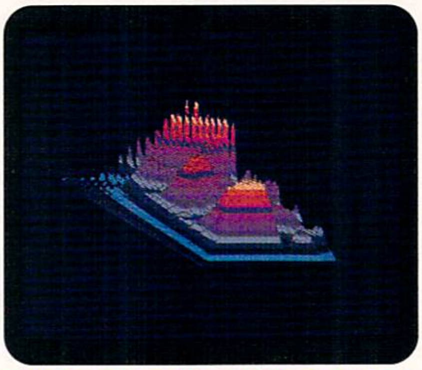
Need some off-the-wall special effects? StarsFX, MultimediaFX, and SpectrumFX/VocoderFX offer unique sound and graphic tricks.

StarsFX generates an overscanned star field that's backed by stereo spaceship sounds. As you steer the mouse, the stars and sound sweep left or right. It's a perfect background for science-fiction videos—just genlock in a spaceship. You can even customize star fields, save presets, and import IFF sounds.

MultimediaFX combines 32 frames of 16-color lo-res animation (quarter-screen size) with four channels of sampled sound. You can manipulate the sound and animation via on-screen control panels or keyboard presets to produce anything from mood music for a horror film to annoyed neighbors. The F2 key blanks out the control panel, so you can send the animation to videotape.

SpectrumFX transforms a sound sample into a 3-D image. You can then alter the sound (which in turn alters the picture) and change the viewing angle. Save the images as a sequence of IFF files for an interesting, abstract 3-D animation.

Packaged with SpectrumFX, VocoderFX takes two samples and splices them into a third sound. For example, input a horn honking and a man yelling "Road-



SpectrumFX creates a 3-D image from a sound sample.

hog," and VocoderFX gives you a talking car horn. Until now such expensive effects were available only to big studios.

My one gripe is that all documentation is provided on disk, instead of in manuals. Otherwise, these are powerful tools at bargain prices.

—Gene Hamm

Video Music Box

Digital Expressions, $109

Hard-drive installable.
Not copy protected.
Not 2.0 compatible.
Accelerator compatible.
Minimum system: 1MB RAM.
Recommended system: 3MB RAM, hard drive, MIDI interface and sound modules, external amplifier and speakers.

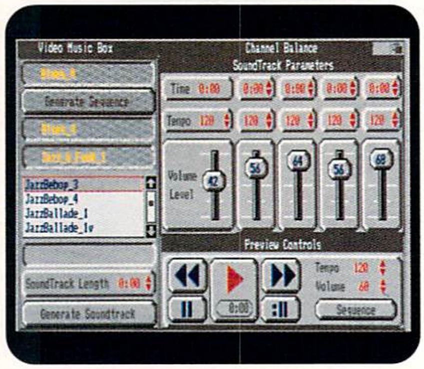
Beginner's sound-track generator for video or multimedia.

In this age of shortcuts, tools for inexperienced users make it possible to produce complex results with little technical knowledge. The latest of these is Video Music Box (VMB), a utility program aimed at aiding sound-track composition for multimedia and video projects. The spirit is willing, but the code is weak.

VMB generates musical sequences in either SMUS or MIDI format from styles and chord progressions. Styles are form-and-feel templates that produce—more or less—certain genres of music (blues, jazz, rock, and so on) by following the musical outlines of the designated chord progression. You can then combine up to five of these short riffs into sound tracks for longer pieces, controlling the length, volume, and instrumentation of each. Styles, progressions, sequences, and sound tracks can all be edited, as well.

You can create new styles with an included utility that converts a SMUS or MIDI sequence of up to 12 measures into a style template. The system is quite flexible, and it gives you many generation options. With experimentation, you can produce some interesting variations. The fact, however, that only five of these can be put together into a sound track needlessly limits the music's scope and movement. You can work around this by exporting sound tracks to an external sequencing program for editing and combination.

Editing style and sound-track note data is a simple matter. Each of the four



Video Music Box's sound-track parameters control screen lets you play and alter your music.

parts is color coded, and you enter or alter note-pitch and duration data by clicking and dragging. The cursor location shows precise time and pitch, so the system works quite well for what it does.

The playback controls seem quirky under 2.0 on A2000s, both from the preview panel and the edit screens. The preview panel should allow for quick and easy playback of a sequence or sound track, but this works only after you depress the play button and hold down one of the mouse buttons. The Play Screen menu item seems to have no effect. (Even the clear and thorough manual was no help here.) Without being able to hear edits as they are done, I found this whole area of the program useless, even though it is well implemented. Mercifully, it appears to work fine under 1.3.

Unfortunately, I have to rate Video Music Box with a "Not Ready for Prime Time" status. Beginners will find it an interesting and simple way to generate background pieces of very limited complexity, but will soon run up against the program's limitations. The biggest overall problem is a shortage of the features necessary to generate music that moves and changes with expression. Video Music Box is on its way, but needs much more depth to be workable.

—By Michael Hanish ■


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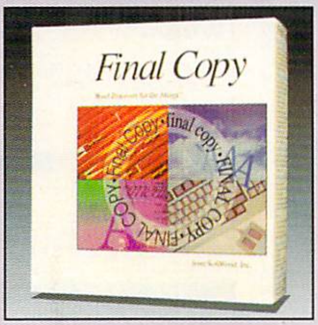
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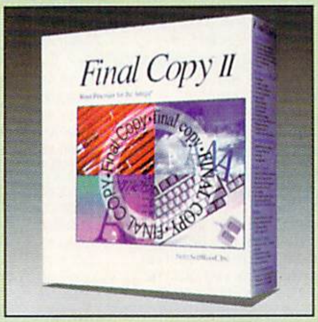
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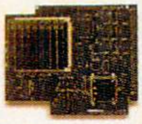




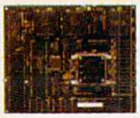
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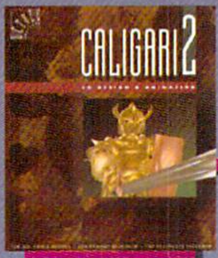
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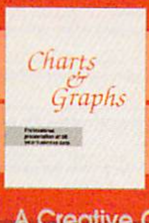
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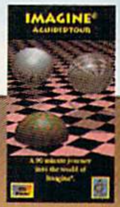
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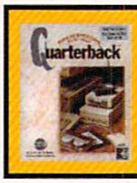
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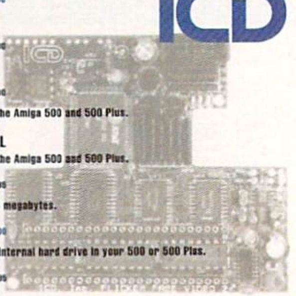
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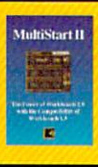
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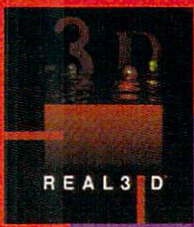
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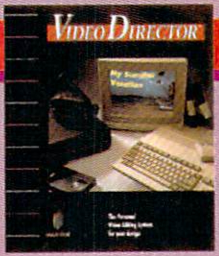
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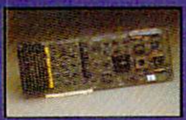
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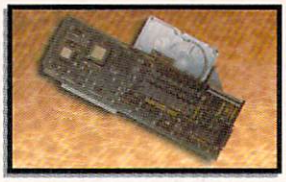


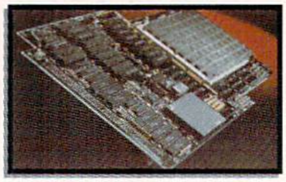




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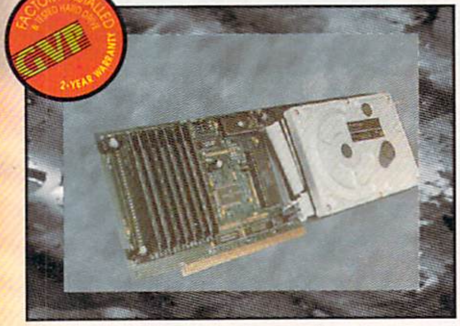
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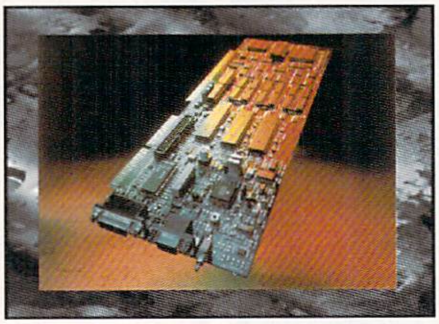
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The Game Preserve

Global Effect

By Jeff James

IMAGINE A GAME combining an environmentally-conscious version of Sim-City with the military aspects of Empire; that's what **Global Effect** (*Millennium/Electronic Arts*, $49.95) is all about.

In it, you're a city planner, environmental scientist, and military commander. Although the general scenarios (save, create, or rule a world) present different challenges (military, economic, or environmental), a central theme of environmental responsibility appears in all three. Managing the growth of your burgeoning cities while simultaneously tending the environment and fending off the attacks of an aggressive enemy—even at the simplest play settings—makes an invigorating challenge for armchair megalomaniacs.

To reach your goals, Global Effect offers a wealth of construction and information-gathering tools. You can build city blocks, pipelines, power stations, mines, farms, and recycling plants, along with dozens of other accoutrements of a civilized society. Or, you can analyze the status of the ozone layer, average planetary temperature, pollution density, and other phenomena. When your opponent's push develops into a military shove, you can fight back with missiles, boats, planes, and an antimissile defense system. All of these features are only a click away, thanks to Global Effect's polished playing interface.



Play city planner, environmentalist, and military commander in Global Effect.

The program is filled with other amenities, including hard-drive support, no on-disk copy protection, support for two human players (via serial link), and a "snooze" option that pauses the game and returns to Workbench. Global Effect needs one megabyte of RAM to operate, and it runs flawlessly under AmigaDOS 1.3 and 2.04.

Continued on p. 78.

CRIB NOTES By Peter Olafson

Okay, now where were we? Oh, yes...just about halfway through Out of This World (*Interplay*, $59.95) and next to a rather deep pool of water with a new code: ICAH.

Don't stand there waiting for the pool to divide. You have a little sabotage to attend to at the bottom. Dive right in, and bear left at the bottom of the main shaft. Your air supply is limited, so be quick about it—no detours, OK?—and use the air pocket atop the second up shaft on the left for a breather. Then head down two levels, bear right, and when the opportunity comes to hop out of the water, take it. Nail the power line, and head back the way you came. Great. You've earned the code FIEI.

Exit the pool to the left; things aren't quite done on this side. Head up—through one of those odd teleport floors we've been seeing—and left again, and give the guard what-for. Pretty straightforward.

Heading right again puts you in a little puzzle some folks have been having trouble solving. There's a set of automatic doors here, with a fireball-chucking guard on the other side, and let's just say he doesn't want to be your best friend.

Here's the trick: Set up a shield to the left side of the doors. Now step forward just enough to trigger the doors open and for the guard to unload his hot cargo, and immediately step back to the left behind the protection of your shield. The doors will close, and the fireballs will bounce back and fry the guard but good. Well, it's his own fault, isn't it? You can now head right, where you'll need to blast through the doors, and then right and up again. (Take the opportunity here to recharge your pistol.)

Down and to the right from the recharging chamber, you'll come upon another rather neat puzzle: three large glass balls reflecting a guard in the chamber below. (Nope, no new code words yet.) When you see *and* hear the guard stop, drop to one knee and fire on the largest of the glass balls. It'll fall and flatten him. Be careful: There's only one shot here, and if you miss, you'll only get the guard ticked off. (If you're successful, you'll get to see your handiwork close up in a bit.) Head back to the left, then down and right, swim across the pool, and keep going. All hell is about to break loose. (But at least you've picked up another code word: LALD.)

Maybe that should have been SCALD, because when you drop down one level, you'll find you've gone from the frying pan into the fire. Don't miss a beat here: Run to the right, blast your way through the door, and keep running. It's your only protection. (Fighting is utterly fruitless.) The close-call quality of these scenes is a lot of fun.

Gulp! A dead-end? Nobody said anything about a dead-end. And the guards are coming. MOMMY!

Well, you've probably noticed the trap door in the ceiling. Out of your reach currently, but not with a little boost. What you need to do is wait around for just that little boost: Position yourself right under the door, set up a shield to your left, and keep reinforcing it until the trap door opens and you're hauled up to safety. Hey, it's your cage-buddy, returning the favor from your chandelier dropping! Hop over the open door and enter the insect-head-as-tank that's waiting to drive to freedom.

Continued on p. 78.

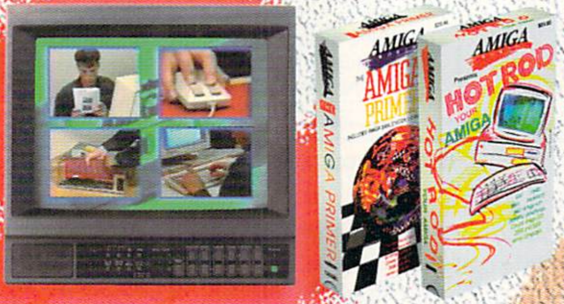
To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 98.

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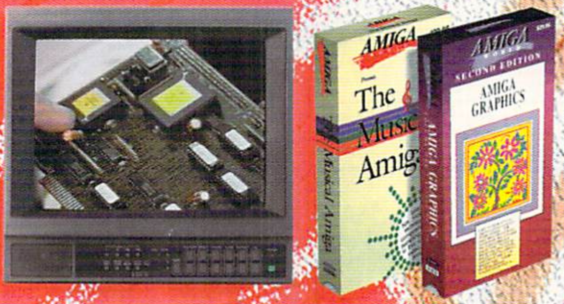
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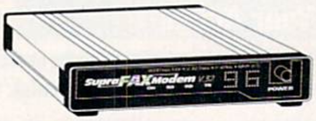
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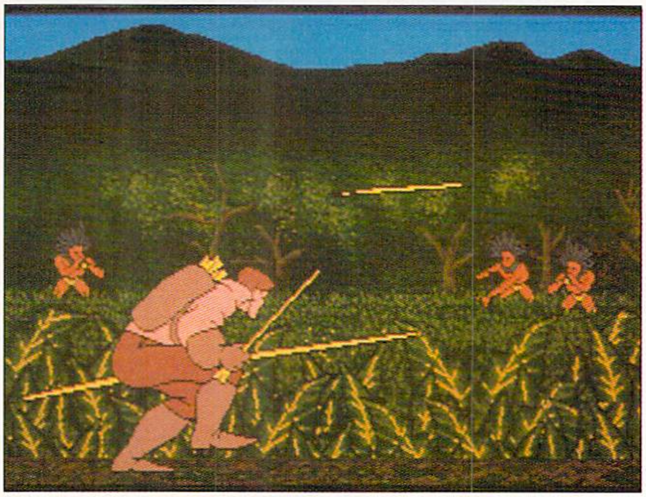
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From p. 74.

A complex game, Global Effect requires a considerable investment of time and effort for victory. If you usually dive into a game without even a cursory glance at the manual, you're in for a brief and bewildering playing experience here. Read the docs—several times. If you're up to the challenge, Global Effect offers an enlightened, ecologically-conscious twist on simulated world domination.



Guy Spy is your name; counterespionage is your game.

Guy Spy and the Crystals of Armageddon

By Peter Olafson

WHEN THE GLEAM wore off the animated spectacle that was ReadySoft's Dragon's Lair, it turned out that the gem had a little flaw. The gameplay was limited: You simply had to hit the firebutton or nudge the joystick in the right direction at the right time. Fun though DL and its sequels were, they didn't reward experimentation and were the same every time you played them.

So the announcement of **Guy Spy and the Crystals of Armageddon** (***ReadySoft***, $49.95) was greeted warmly by many as an opportunity to extend the cartoon-quality animation to a more interactive setting. Well, it's finally here, and it's not bad. Unfortunately, neither is it the greatest thing since sliced HAM.

You use the joystick to guide the squinty superagent—looking very '80s in his open-armpit shirt—through 13 chained scenarios in search of German archvillain Von Max: from a shootout in the Berlin railway station to a sword fight with a mummy in Egypt to a final fists 'n' knife fight in Max's Doomsday Tower.

Sounds familiar, right? Sure enough, Guy Spy is very much a descendant of the quartet of Dragon's Lairs and Space Aces that preceded it—in ways good and bad. The animation recalls the fluidity of the earlier games based on the work of animator Don Bluth. The graphics are dark and moody. The music is superb.

There's certainly more variety and challenge in the gameplay here than in your average Space Ace. There's no preordained correct path except skillful play; in that station sequence, Guy can sidestep, roll, or aim and open fire.

But while he's more fully under the player's control, the range of action is still rather limited: fighting (albeit with multiple weapons), dodging, and maze-exploring in various combinations—all arcadish tasks familiar from the earlier games. There's no real interaction with the environment other than using it as cover, and there are no alternate paths. (Success is one scenario leads straight into the next.) The game is a step in the right direction, but hardly the "breakthrough in adventure gaming" claimed on the box.

In some respects, it's just standing still. The four disks can't be installed on hard disk or even backed up within the AmigaDOS environment. You have to play with the originals (and a save disk). At the same time that ReadySoft is upping playability with one hand, it seems to be sacrificing it with the other. (A ReadySoft representative did reveal plans to make future releases hard-drive installable.)

And the title screens are—ack! phhhpt!—among the plug-ugliest I've seen on any Amiga game from a company with ReadySoft's reputation. Of course, they're just *title screens*, but they don't exactly put you in the mood for anything beyond the art-by-the-yard show at the local motel.

This isn't a slam. I'm just closing the door on Guy's toes a *little* hard. If the earlier games captured your heart and wrist,

Continued on p. 82.

CRIB NOTES

From p. 74.

This is freedom? It's a change of pace, anyway—the perspective switching to an exterior shot of the insect head in some sort of colosseum under fire from every direction and an inset of your hand roaming over a set of controls. Which are utterly foreign to you. Great.

Actually, this is fairly simple stuff. You just need to summon the batch of controls that includes the option to fire the escape pods (the only way out of here). To do so, you'll need to push the lower of the two buttons on the initial panel (which calls up another panel), then the lowest and left-most button (which calls up yet another array), and finally the top-left button. Whoosh. You're gone. Roll credits, right?

Um, no, not quite yet, though you do now have a new code word (LFEK) to make life a bit easier. The pod crashes into what appears to be a harem, and it's definitely scared 'em. The naked ladies, that is, who scatter. The guards just go about their usual business of immolating you with extreme prejudice. You'll want to run right one screen, set up a shield to the right, and concentrate your fire on the guards to the right—reinforcing the shield every few shots. (Happily, you're immune to fire from the left.) After you've downed four guards, you'll be able to run right, where your large friend shows up again. Almost there.

Almost. The walkway gets shot out from under you along the way, and you fall for it. Fortunately, someone catches you. Unfortunately, it's a guard. Fortunately, he doesn't kill you. Unfortunately, he cripples you. Fortunately, your friend shows up again and starts to fight with the guard. Unfortunately, the guard beats him. And, fortunately, you've been smart enough to crawl over to the levers at the right side of the screen—and to hit one when the returning guard reaches the middle of the screen. Haven't you? The resulting laser blast from the device on the ceiling removes the problem nicely, don't you think?

Another pull of a lever opens an exit in the ceiling. From here, you shouldn't have much trouble finding your way to the closing animation—and an oblique reference to a sequel. Code word: Nice work.

I'd planned to devote about half this column to getting started in Origin's Ultima VI: The False Prophet. (That's me, all right.) We're out of space, so we'll do it next time, when the Avatar himself will visit Crib Notes for an up-close-and-personal interview.

In the meantime, if you are having trouble with an adventure game—"Is it OK if I open the little metal door in the disk and rub my greasy fingers all over the inside?"—you can write to me at 25 Belmont Ave., Madison, NJ 07940. I can also be reached on line atPETEROO on GEnie and Portal, 74160,3053 on CompuServe, and Peteroo@cup.portal.com on Usenet. □

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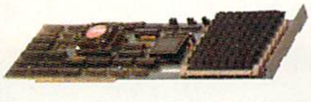
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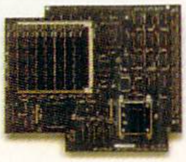


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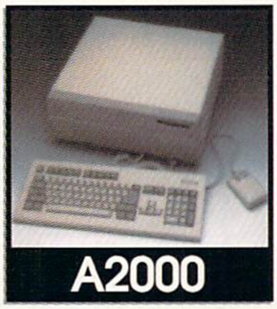
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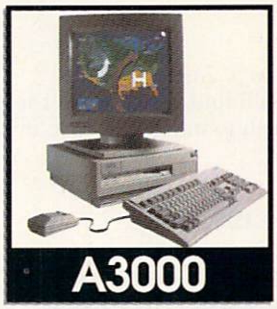
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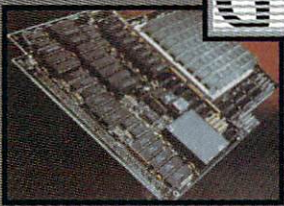
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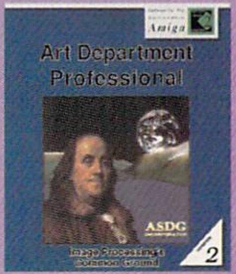
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From p. 78.
you'll find this a modest improvement. Just don't expect the earth to move. It didn't for me.

Gods

By Joe DiCara

FAMOUS FOR GLOSSY graphics, crisp sound effects, and blockbuster play, the Bitmap Brothers have pushed the programming limits again with **Gods** (***Konami***, $39.95).

An eight-way scrolling arcade challenge, Gods casts you as Hercules, who has been challenged by the gods to free a legendary city from the rulers of darkness. If successful, you will be granted immortality and a seat among the gods. A worn out scenario? Maybe, but four action-packed levels, each complete with three unique worlds, plus a vast array of new weapons and enemies, provide the hook to keep you coming back for more.

Every level is crawling with highly detailed, smoothly animated, and very colorful enemies that get meaner as you progress. Some come straight at you; cautious ones fly around dodging your shots. Scattered throughout the levels are monsters that want to steal your possessions (or kill you if you're empty handed). You can, however, trick them into helping you obtain objects normally out of your grasp. Let a thief steal the item that you can't reach, then kill the goon and pick up the treasure. Many such tweaks make Gods more than just another superhero monster bash.

In addition to monsters, locked doors also block your passage. You obtain keys by solving the clever traps and puzzles. Occasionally, the two interact: Escaping a trap might reveal a clue to some unsolvable puzzle. Keys also open chests of valuables, with which you can purchase better weapons, potions, and health.

Is Gods easy? With only three lives, you'll be hard-pressed to outlast all the monsters, avoid the sinister traps, defeat the four super-sized guardians at the end of each level, and solve the intricate puzzles. Is Gods fun? You bet!

Napoleon I: The Campaigns 1805–1814

By Jeff James

FORGING THE REVOLUTIONARY fervor of early 19th-century France into a military force without equal, Napoleon Bonaparte soon had the nations of Europe at his feet. You can step into his shoes with **Napoleon I: The Campaigns 1805–1814** (***RAW Entertainment***, $49.95). The four included scenarios span the bulk of Napoleon's reign as Emperor of France and let you assume control either of his elite *Grand Armeé* or of the allied coalition's combined forces.



Napoleon I's strategic map lets you monitor the movements of units from France, Russia, Prussia, and Austria.

The action takes place on two levels of magnification: strategic and tactical. The strategic level displays a scrollable chunk of Europe, dotted with military units, towns, roads, and major geographical features. Combat takes place on the tactical level, where you command individual brigade-level groups from the units.

The combat system is based upon the military formulae presented in Col. Trevor Dupuy's book *Numbers, Predictions and War*, a tome revered by wargamers for its accuracy and detail. In determining the outcome of combat, Napoleon I considers such variables as morale, fatigue, supply, training, leadership ability, tenacity, weather, and terrain. For armchair generals, the quick-combat option rapidly decides the victor in armed engagements.

Although the game has an admirable amount of detail—including a facility to resolve combat by using tabletop miniatures—it has an equal share of weaknesses. The maps and unit graphics are crudely drawn, sound is nonexistent, and the interface—although supporting pull-down menus and other amenities—is cumbersome.

The program operated smoothly on all Amigas running AmigaDOS 1.3, but ran sluggishly under 2.0, even on an A3000. Filled with interesting background information, the manual is in dire need of a few screenshots and Amiga-specific details. The game is not hard-drive installable, it requires one megabyte of RAM, and the copy-protection scheme makes you locate words in the manual.

While Napoleonic-era aficionados will find much to like in this game, the poor docs, eight-bit-quality graphics, and problems with AmigaDOS 2.0 make Napoleon I a near miss overall. □

SHORT TAKES By Peter Olafson

The Dark Queen of Krynn
Pools of Darkness
Gateway to the Savage Frontier
Shadow Sorcerer

Strategic Simulations **just keeps banging out these role-playing-by-numbers games. Actually, The Dark Queen of Krynn ($49.95), the newest entry in the AD&D line, isn't too shabby. It maintains the playability and quicker pace that has been a hallmark of of the Dragonlance games ever since Champions of Krynn. The quality of the graphics is markedly off, though, and it was sometimes difficult to tell whether there was a passage in front of me or not. And what's the Eye of the Beholder-style compass doing in here?**

Of course, if you've emptied a bag of potato chips, you'll probably eat the last one, whether you're hungry or not. So those who've sliced and

Continued on p. 87.

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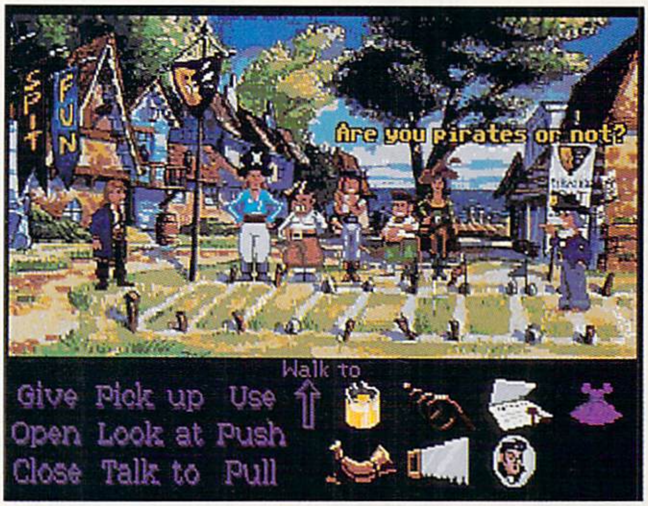
MORE SHORT TAKES

From p. 82.

diced their way through Pool of Radiance, Curse of the Azure Bonds, and TheSecret of the Silver Blades will doubtless find something to slice and dice in Pool of Darkness ($59.95), the final game of the initial AD&D quartet. The 32-color graphics are notably better than in Secret, and while there's still tons of fighting, the puzzle element seems more dominant. And it's fun being back in Phlan—the city you saved in POR—though it doesn't last long. All in all, not a bad way to go out.

By contrast, Gateway to the Savage Frontier ($49.95)—the first game in SSI's *new* Forgotten Realms saga—comes in like a lamb. The problems start when you open the box and find a card that states: "Due to the size and scope of Gateway to the Savage Frontier, the game cannot be played on a hard drive." Games of size and scope *demand* to be played on hard drive; swapping the three game disks, even on a two-drive system, gets to be a royal pain. (Of course, the kicker is that it apparently can be played from HD by anyone adept with a file editor.) The pics are tolerable, but the game is also intolerably slow. For many, unfolding the story, however engaging, is likely to prove more troublesome than rewarding.

Actually, Shadow Sorcerer ($49.95) is the most plain fun of any of these. This follow-up to (and presumably replacement for) the much-demeaned engine behind Heroes of the Lance and Dragons of Flame adopts an isometric point of view and an icon command system that emphasizes ease of use, bountiful good looks, and the pleasures of exploration. The mission is also a nice change of pace—your quartet is shepherd for a passel of refugees whose confidence you must keep. Are there any more like you at home?



MONKEY ISLAND II: LECHUCK'S REVENGE

Monkey Island II: LeChuck's Revenge (*LucasArts Games*, $59.95) is simply the best animated adventure available for the Amiga. It's funny as Tom Hanks on a roll—dig the *Saturday Night Live* influence at the spitting contest!—and effectively does in 32 colors what the IBM does with 256. Not to mention being big (11 disks); and ya gotta love a game that calls its own copy protection "lame-o." (It isn't.) Most importantly, it has the same vigorous sense of fun as its predecessor; there's never a dull moment in LeChuck's Revenge.

Guybrush Threepwood has turned Scabb Island into a bore by repeating his How-I-Vanquished-LeChuck story ad infinitum. Eventually, he brags to the wrong person, and before long the guy with the writhing beard and the interesting skin condition is back. Guess who he wants a piece of?

The sonics still aren't quite what they should be—no footsteps, no creaky boat-bobbing—and there's an awful lot of unnecessary traipsing around to solve the many enjoyable puzzles, which isn't quite the same as being "non-linear."

Superb stuff. I laughed all the way through. ►

MORE SHORT TAKES

A-10 Tank Killer 1.5

The ugliest airplane in the West is the basis for one beautiful flight simulation. The A-10 Warthog is essentially Mickey Mouse with missiles, but on a speedy computer system, this overhauled version of the 1990 game flies like a dream.

***Dynamix*'s original A-10 Tank Killer wasn't bad—smooth but spartan in flight—and v. 1.5 ($59.95) is still a bit spartan. The most obvious additions are new missions based on the Gulf War, in which the plane was among the principal molars chewing up Iraqi armor.**

If that was all there was to it, this would be a data disk, but Dynamix has recast the flight model, added Extra_Halfbrite and analog joystick support and a slew of other new options. The result is that A-10 1.5 is one of a very few genuine high-end Amiga flight sims; it's slick, fast and sensitive to the controls. (Be advised, however, that it's also designed for accelerated machines: 16-MHz or faster.)

Return of the Living Text Adventure

I was all set to sing the praises of a nice Ultima clone called Legend of Lothian (available as Legend.lha in the Amiga Arts section on CompuServe) when I stumbled across this taster for a wonderful text-and-graphics adventure from Down Under on Portal.

It's creepy, it's logical, it's exceptionally well-written, and the graphics are as stylish and professional as anything in this fallen genre. This game (ROLTA.DMS) from *Shadowplay* ($25 shareware donation) has heart, and I don't mean the disembodied, horror-story kind. Or maybe I do. □

THE NEXT ROUND

STATE SECURITY—As the KGB watches Soviet citizens, who watches the KGB? You do, in *Virgin Games*' new adventure, KGB ($49.99). In the role of former GRU captain Makism Rukov, you are transferred to Department P, Moscow KGB, a division that investigates cases of corruption within the KGB. Your first assignment is to uncover the murderer of private detective Golitsins. As you delve deeper, you find yourself wading through a swamp of conspiracies and counter conspiracies, with the underlying current of overthrowing the government. (RS# 101.)

THE MOUSE GOES WEST—Based on Stephen Spielberg's *An American Tale* and *An American Tail: Fievel Goes West*, An American Tale (*Capstone Software*, $44.95) follows the adventures of Fievel Mousekewitz. Children can join Fievel in his quest to rejoin his family and to best New York's Mott Street Maulers and the Old West's Cat R. Waul gang. Peppered with puzzles and games, the program features interactive characters and backgrounds digitized from the films. (RS# 102.)

ARCHAEOLOGY AND THE NAZIS—In Indiana Jones and the Fate of Atlantis (*LucasArtsGames*, $59.95), you (as Indy) and archaeologist Sophia Hapgood must unlock the magic of Atlantis before the Third Reich harnesses the Lost City's power. Depending on your early decisions, the game follows a puzzle trail, an action-based route, or a dialogue-centered path. Factor in the more than 200 rooms to explore, and you'll be lost in the '30s for hours. (RS# 103.)

JOIN THE FUN—Got a new game in the works? Tell us about it. Send all the particulars to The Next Round, *AmigaWorld*, 80 Elm St., Peterborough, NH 03458. ■

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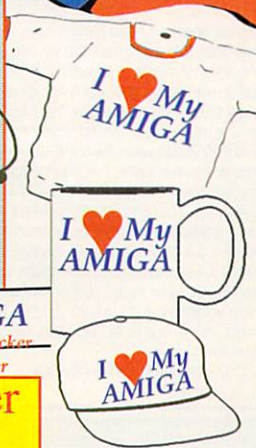
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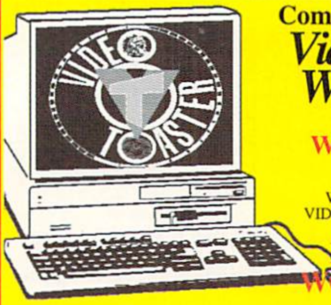
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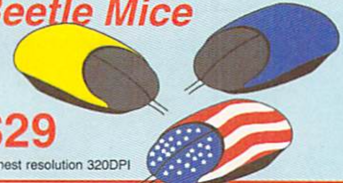
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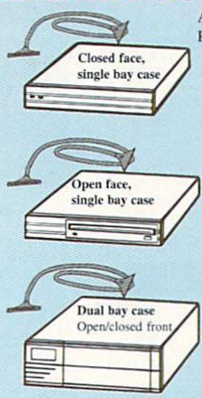


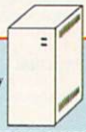
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UNBEATABLE VALUE!

WB119ABCDE: Font Set This collection contains over 100 typefaces for use with Professional Page 3.0 or PageStream 2.1+. These fonts will output to any laser printer or dot-matrix printer with no jaggies, thanks to outline font technology. Very professional looking typefaces. *5 disk set, counts as 4.*

NEW DISKS

VO9: 24-Bit - Contains Rend24 which allows you to proof Toaster-generated 24-bit animations. Also contains utils to convert IFF's to IBM VGA/Windows readable format. Also contains latest release of JPEG->IFF converter.

VO8: CompuGraphic Fonts - Contains 2 clipart-style fonts and 4 actual typefaces for use with WB2.04 and it's Fountain utility. Great for desktop publishing and/or video projects.

VO7: StarTrek Objects - Contains the USS Reliant, NCC-1701D (the Enterprise from Star Trek:TNG) and a Ferengi Marauder ship. Also contains a fully detailed Porsche 911 and Apache Attack Helicopter. Imagine format.

VO6: Modelling Objects - Contains 20 vector objects in Imagine format. These are perfect for use with VO5 or your favorite 3D modelling program. Includes Amiga 3000, space station & many more!

VO5: Modelling - Vertex allows you to create 3-D objects without using the abstract X, Y and Z views. Loads Sculpt-3D/4D, Turbo Silver, Imagine, LightWave, GEO and Wavefront formats. MagicTween will metamorphasize any two pictures by automatically animate the "in-between" frames.

V04: Video & Anim - Video_DB will catalog all of your videotapes. Slate is a sharp graphic of a slate for your productions. CyroUtils splits, makes and gives info about ANIMs. RTAP lets you play large ANIMs on small memory machines.

V03: Image Utils - let VideoToolsOnTap let you tap into the video power of your Amiga for fades, color and greybars as well as a plethora of other indespensable video functions. TitleGen will do professional crawling titles. JPEG converts JPEG-> IFF with amazing compression. ImageLab performs special effects on IFFs.

V02: Stillstore - Used to create the "over the shoulder" graphic inserts ala the 11:00 news.

V01: Graphics - Picbase will let you view and track ALL of your IFF pictures over all of those floppies! Freepaint is a Deluxe-Paint workalike. Agraph is a powerful utility to produce snazzy graphs.

FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga origional.

FD81: SuperGames - Some of *the* best games--Donkey Kong is better than the origional *with an extra level!* Frantic Freddie and TrailBlazer are both fast-pased arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!

FD80: Technoban - If you like logic puzzles, this disk is for you! Create your own puzzles with the built-in editor or play the many pre-made ones. Requires Fat Agnus (1MB of Chip memory).

FD79: Addams Family Quiz - They're delightfully creepy and spooky and now they're in your Amiga! Classic digitized graphics and sound samples make this a real crowd-pleaser. Wait till you "talk with Cousin Itt!"

FD78: Potpourri - Lothian is a great Ultima-type adventure game with great graphics. Rocky is a remake of the classic Boulderdash.

FD77: Arcade Series - Galaga'92 is a clone of the arcade game of the same name with several gameplay enhancements--with smooooth, sharp graphics, it's better than the origional! Pharaohs Curse is a clone of the origional C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered! Galaga requires 68020+

FD76: Catacomb - is a full graphic dungeon adventure game with beautiful graphics and a very slick icon/mouse driven interface.

FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks—incredibly well done! Search is a maze game unlike any other—included is a level editor too. (Tanx requires 1 meg chip memory=Fat Agnus)

FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!

FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.

FD72: Sword of the Warlock - This is a demo version of a great public domain graphic dungeon adventure game. The adventure spans three diskettes and allows two players to go adventuring. The game has a 'Bards Tale' feel to it. Three disk set, counts as 2. Requires 1 meg of RAM and 2 floppy drives or HD.

FD71A&B: Star Trek: TNG Trivia Challenge - So you think you know The Next Generation, huh? Complete with fantastic sampled sounds and digitized images, this game even looks and sounds like a genuine Star Trek terminal! VERY thorough and complete! Counts as 2 disks.

FD70: SpaceGames - Contains AmiGoids, >finally!< an Asteroids game that takes advantage of the Amiga—totally configurable with great sound and grpahics. In Cosmostruction the object of the game is for each Cosmostruction team to acquire the most points while construction energy ducts between the space station and planetoids.

FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.

FD68: Potpourri - Eternal Rome is a strategic simulation of the Roman Empire including military, diplomatic, political, economic and social factors. Lord of Hosts is a board strategy game for 2 players. In Moonshine, you've got to get the hootch across the state line—a great rolling, scrolling driving game!

FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" commercial grade Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!

FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Requires 1 megabyte of memory.

SPECIAL PRODUCT!

QT1: THE A64 PACKAGE - A very complete Commodore 64 emulator. Supports any CPU and is fully compatable with WB1.3 & 2.0. This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. Two disk set, counts as two. Special price $49.95 - including hardware.

WB120: Grinder - a complete graphics conversion package that supports GIF's, JPeg, Atari ST (Neochrome & Degas), PCX, Targa, TIFF, HAM-E and IFF format pictures.

WB118: Amiga Beginner - You asked for it! A tutorial for the beginner on using your Amiga! Covers the CLI and Workbench, it's great for learning about the Amiga. Also contains numerous *beautiful* 16-color icons for WB 2.0

WB117: Religion - Contains Scripture_Mem (aids in memorizing verses and passages) and in Pauls Journey, you are Paul of Tarsus exploring the Mediterranean and preaching just as Paul did. Req. 1 MB RAM.

WB116: Databases - This is what you've been waiting for! Contains 5 uniquely specialized dtabase programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!

WB115: Term - If you have AmigaDOS 2.04 and a modem, then this is *THE* program for you. Term *totally* conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were written to this caliber.

WB114: Fonts #4 - Contains 36 bitmap system fonts.

WB113: Sid II - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now *completely* rewritten, Sid 2 will undoubtedly astound you.

WB112: Productivity/Business - Stock Analysis allows automated downloading of stock data with full analysis capabilities (requires modem). SubStore will allow you to log magazines and articles with full search/scan/print capabilities.

WB111: Cellular Automa - Straight from the pages of the January 1990 issue of Scientific American, this electronic model will allow you to simulate cellular circuits.

WB110: Electronic Baby Book - Immortalize your children on your Amiga! Tracks everything about your newborn—first steps, words, tooth, birthdays, X-mas, friends, etc—even space for a digitized photo!

WB109: VerseWise - Display, search and output The New Testament to text files or your printer.

DD86: The Programmer - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code--saving you countless hours of work! Requires, and writes code for, AmigaDOS2.04.

DD85: AnalytIRIM - Tis incredible program is a combination of a powerful spreadsheet and a Relational Information Manager (database). Not for the faint of heart, this is a heavy-duty package! Req. 1 MB RAM.

DD84: Proteus BBS - This disk contains the full-blown version of the Proteus BBS software. Totally configurable & ultimately powerful. Requires a hard-drive, ARexx and at least a meg of memory.

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software *with* Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatable drives.

DD82: Unix - Contains a working demo of Minix - a Unix workalike. Minix is system call compatable with V7 of Unix.

FUN DISKS

FD5: Tactical Games - BullRun - a Civil war battle game, Metro you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: Pacman - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.

FD9: Moria -. This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One,VideoPoker and more.

FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26:Arcade Games - Marble_slide is a commercial quality game—similar to a Lucas game named PipeDreams, excellent playability and entertainment. Mutants—a small version of the same arcade game. SuperBreakout is a Pong/Arkanoids type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as froger, and SBreakout the original breakout with more.

FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrnth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - An instrument flight simulator for a DC10.

FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.

FD35: Omega (v 1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better that all previous versions. Play time several weeks.

FD37A&B:Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

FD39A&B: Star Trek, The New Generation - This is a, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Excellent!!! Counts as two disks. Requires 512k

FD44: Game - Mechfight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new Amiga 9000. Most of all, don't forget to stay alive...

FD49:Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.

FD56: Arcade - Includes SpaceWar. HueyRaid is a well done helicopter arcade game. PowerPong's a great expanded pong game.

FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychadellic trip through several different worlds—each distinctly different.

FD58: GAMES! - Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatable printer.

FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a great Dr. Mario clone. Enigma; is it a gameor a puzzle?

FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kill or bekilled game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.

WORKBENCH DISKS

WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program. Comm (1.34) - Latest version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

WB5: Fonts #1- Several fonts (35) for the Amiga, also included are five PageStream fonts,and ShowFont - a font display program.

WB6: Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDos system fonts (many up to 56pts).

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus III.

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map iff image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP!

WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to do harddisk and floppy disk backups, FileMast - a binary file editor, Labelprinter - Disk label printer with very powerful features.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything.

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No shipping charge on USA blank disk orders, Canada and Mexico add $.15 each, other foreign add $.50 each.

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), , Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

WB35: 3D Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, and World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbenck screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!

WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15

WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.

WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection. Requires 2 drives or HD.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Version 3.20, which is compatable with WB2.04.

WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ,...), people, and transportation.

WB47: Clip Art - HighRes clip art with the following motifs - hair, drafting, summer, animals and macfood.

WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.

WB49ABC:Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coolroby, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrilight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunride, thrstdemo, tnight, waves, and woow.

WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images often consisting of highly polished spheres and objects. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Howard M.D", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.

WB61: Intermediate Utilities - Includes programs to help to drasticaly decrease flicker in interlace and hi-res modes (antiflick), an Atari-st emulator, an eprom programmer, turn your amiga into an eight channel digital data analyzer or ocilloscope, and more.

WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.

WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, disk track recovery, and forced DISK VALIDATION of corrupt disks.

WB66: Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.

WB68:Music Utilities - several good utilities for the Amiga music enthusiast. Includes, Noisetracker - a great music creation program, Sonix2MOD - converts sonix to .mod files which then can be used by noisetracker, soundtraker, and MED, SpeakerSim - a speaker design tool demo, Wondersound is an additive harmonic instrument design tool with a separate envelope design window and 16 relative harmonic strength and phase angle controls.

WB69: Music - This disk has over 90 minutes of classical and modern electronic music for you Amiga.

WB70: Desk Top Pub - Atcp - transfer Macintosh screen fonts, Mac or IBM format .AFM metric files, to Amiga screen fonts and PPage .metric files. With this program, open the door to the libraries of Adobe and PostScript fonts! Calendar - month templates in PageStream form. Post - a full featured postscript file display and print utility.

WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.

WB76: Applications - This disk contains Stichery - a often requested knitting design program, Lotto - a rather complete lottery tracking and prediction utility, SSS - this screen capture program can grab almost any screen including games, Today - a personal calender, Tarot - fortune teller, and Grammar - grammar checker.

WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.

WB82: Animations - Four full length, well done "movie" style animations, Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.

WB83: Computer Art - this disk has some of the best Amiga generated computer art that we have collected in the past 5 years.

WB85: Graphics - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice Iff Image processing package.

WB86: Centurian Press - An electronic newspaper - requires AmigaVision.

WB88ABC: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament-King James version. A great utility. Three disk set, counts as three.

WB90: Rippers, Strippers and Beats - For the Amiga music enthusiast, this disk contains many programs designed strip music from your favorite games and programs. Also contains Drums, a very nice drum machine. This disk requires some knowledge of the CLI.

WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.

WB95: Checkbook Accountant 2.1 - This is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

WB98: Business - Includes BBaseII a nice, powerful database; BizCalc—a personal or mortgage loan calculator with amortization capabilities, Loop—a flowchart maker, Formmaker - design professional forms on your Epson LQ-2500 compatible printer.

WB99: Lifestyles - Includes AGene—family tree program that tracks up to 600 people/marriages/etc. Landscape is a CAD program to create gardens/landscapes. Loom simulates an 8 harness loom; experiment with pattern design in an instant feedback environment.

WB101: Chemesthetics - is a program that displays molecules as a calotte model. This kind of display contains a certain esthetic attitude, even extremely poisonous molecules like nicotine and dioxine look quite nice.

WB102: Telecommunications - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it comes with a script file that creates a full-featured BBS system.

WB103: Music - Contains 12 "great" Soundtracker/MED music MODules...complete with programmable/shuffle player...8 bit audio never sounded so hot! Two disk set counts as two.

WB104: GrabBag - Q&A Trivia (requires AmigaVision) is a trivia game for 1/2 players...add your own questions to customize the difficulty level! Sysinfo is great for telling you how fast/slow your computer is, what boards are installed, chipsets, etc. AmiGazer will plot stars in the heaven from any position on earth complete with magnitudes and constellation identification.

AmigaDOS 2 Release

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WB105A&B: Workbench 2.0 Extras #2

This set contains the programs that should have been included with WB2.0. These powerful utilities take full advantage of the *many* new capabilities that are available in Workbench 2.0.

Tool Manager - a wonderful utility to add programs to your TOOL menu, create a collection of icons on the workbench to easily launch frequently used programs...and much more! A *true* must have utility!!!--*All* of our Amigas rely on this utility. (See the review in AmigaWorld-May'92)

Virus Checker - Full virus protection can be yours by simply dropping this icon in your WBStartup drawer.

Degrader - gives you tools to try to make non-2.0 happy programs work!

Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files (text, IFF's, source codes, libraries, etc)

Font Editor - Create/edit bitmap fonts with full color support!

Screen Blankers - ala fractals and spliners and swarming bees! No more boring black screen. Colorful, interesting and highly hypnotic effects!

Requester Enhancers - no more stale "Please Insert Volume" requesters--these are animated requesters for *all* of the system's requesters.

CPUBlit - speeds up text displays for owners of 68020+ CPU's.

SafeReboot - adds a safe way to reboot your computer...can greatly reduce disk validation errors!

TWO DISK SET, COUNTS AS TWO

WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and phone number dialer.

WB107A&B: Educational - Drawmap is a program that generates representations such as hemispherical views, and orbital views of the Earth's surface, complete with national boundaries. Screens can be printed or saved to disk as standard IFF files. Full user-configurable online help facility. 68020+ version included. 2 disk set, counts as 1!

WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renound editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!

DEV DISKS

DD45: AREXX Programs - This disk contains several useful arexx programs and examples, PopCLI4 - The latest of a must have utility.

DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.

DD50: ARexx #2 - a must have set of tutorials on ARexx and several useful examples and utilities for ARexx development.

DD51: Circuit Analysis - Aspice (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.

DD54: Compression - This disk is loaded with all of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc, Lharc, Lhwarp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo. Also IFFcrunch an excellent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide. ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your CLI more powerful.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa, Also several boosts for your startup-sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and ftext - several wonderful routines to help in basic programers, and Xscheme - an interpreted object oriented language.

DD66: Programming ToolBox - Many programs to help in your development efforts (most for C some for basic) Includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!

DD69:Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrag but greatly improved, Selector - put menus on your workbench screen, and more.

DD71A&B:C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler and environment system. 2 Disks, counts as 2.

DD77: Fortran - Contains a full featured Fortran77 development system. Also contains EzAsm a strongly macro dependent 68000 assembler.

DD79abcd: Amiga "C" Tutorial - This is the most comprehensive C language--*Amiga oriented*--set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples for Amiga programming. 4 disk set, counts as 3.

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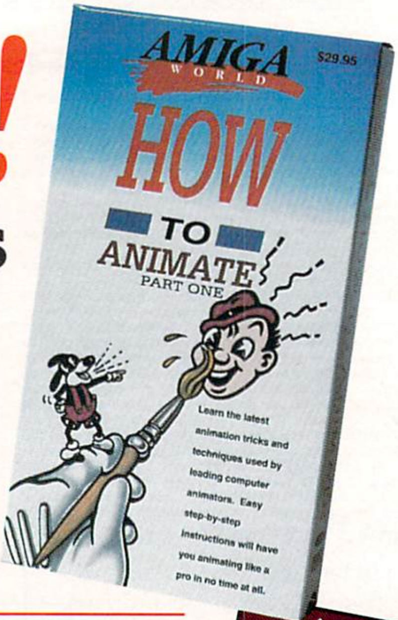
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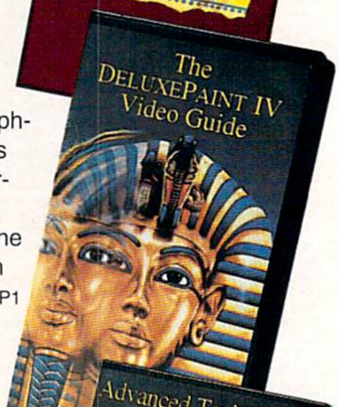
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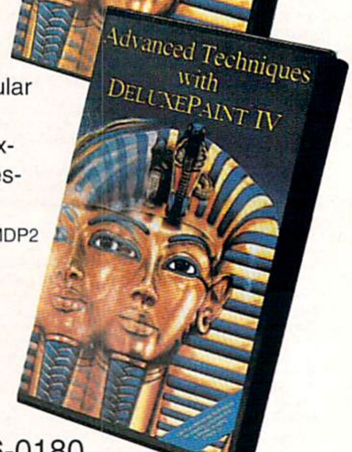


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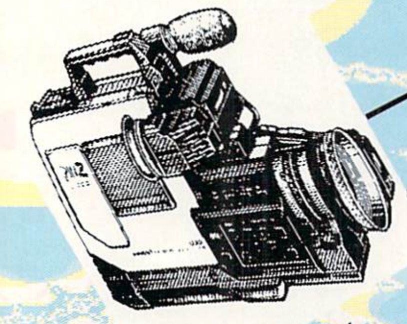
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Acceleration: GVP 030 Combos 35/40/50MHz, GVP 040 G-Force 28/33MHz, Progressive 040 28MHz, Zeus 040 28MHz, Magnum44 040 28MHz, Magnum44 040 33MHz, Mercury 040 3000, CBM2630 030 28MHz, MegaMidget 030, 38-special, Vector 030 25/33/40

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Other: Flicker Free Video 2, Knox Blackburst, GVP Impactvision, Polaroid Digital Pallete, Firecracker 2400, Sharp Scanners JX320/450/600, Breadboard VDA, Video Blender, Video Toaster, Sony XVD300, DPS V-Scope, DMI Resolver, AMAX Plus, Opal Vision, Rambrandt, DPS VDA, DCTV



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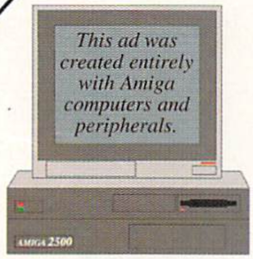
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AW Shucks!

Item: On page 22 of the September issue, the area code of author Victor Osaka's telephone number was incorrectly printed. His number is 310/398-7649.

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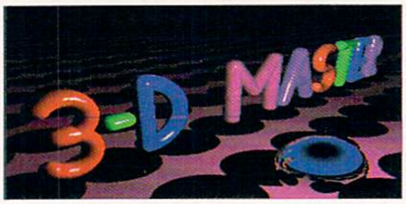
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TSP29ABC: King James Bible The complete text of the bible is included on this 3 disk set (counts as 3) with printing and searching capabilities.
TSP28: Bitmapped Fonts This disk contains 67 fonts for the Amiga, all under 25 points in size...a font for every occasion!
TSP27: Octa-MED This remarkable program doubles the sound capabilities of your Amiga from 4 channels of audio to 8! Almost completely identical to MED, this is a truly remarkable program.
TSP26: Directory Utilities Contains all of the best public domain and shareware file and disk utilities available for the Amiga, including UtilMaster, FileMan, M2DU, Sid and DirMaster.
TSP25: SpaceGames Contains MoonBase a very graphically detailed lunar-lander game, SpaceWar-a two player (either in person or over the modem) space battle. Nebula is a 3D world you must defend..definitely commercial quality.
TSP24: Printing Utilities This disk contains a very nice Banner maker that will use any AmigaDOS font with full-color printing. RobsLabelCreator will allow easy creating of labels for your diskettes. PrintStudio allows easy printing of text/graphic images with total control over page numbering/titling, etc.
TSP23AB: Tobias Star Trek A graphic space adventure where you're the captain of your own starship. Travel through the universe, stop the Romulans and Klingons and complete your missions. Two disks, counts as two.
TSP22: 3D Objects This disk contains 18 different vector-objects for use with Sculpt and Imagine. *Some* of the objects include: train engine, synthesizer keyboard, Amiga 3000, space station.
TSP21: Disk Duplicators This disk contains all the best utilities to backup diskettes. Included are XCopyIII and NIB which will backup copy-protect programs. Also includes SuperDuper which is an incredibly fast AmigaDOS copier. Freecopy will *remove* copy protection from many popular commercial programs.
TSP20: Board Games Includes Checkers, Dominoes, Clue, Jeopard and Monopoly. Throw away your dice and let your Amiga take care of the details...hours and hours of family fun!
TSP19: PacMan Classics Contains Mazeman, Zonix and PacMan87--all great implementations of the origional arcade classic.
TSP18: MS-DOS Emulation Contains PCTask and IBeM, two shareware IBM-MS Dos emulators for your Amiga. Also included are utilities to allow Amiga drives to read/write 720K format MS-DOS disks--Multidos and MSH.
TSP17: Printer Drivers This disk contains over 70 printer drivers for many popular printers.
TSP16: Telecommunication This disk contains two first-class modem programs, NComm and Access. This disk is for the beginner or expert telecommunicator, featuring all the popular communication protocols, including X, Y and Z-Modem. NComm has very advanced script capabilities for performing automated log-ins, downloads and uploads.



3DMaster featured on TSP42

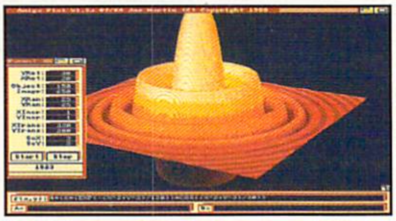
TSP15: MED This disk contains the premier music package, MED (Musical EDitor). It will allow you to use digitized sound samples as your instruments and use them in your own songs. Its tremendous editing power makes MED more of a musical word-processor. An extremely well-done program. Many commercial software companies use this package to create soundtracks for their entertainment programs.
TSP14: Plotters This disk contains several of the best mathematical plotting programs available for the Amiga. Includes AmigaPlot--a 3-dimensional mathematical function plotter (pictured), Aplot2.0, and PlotXY
TSP13: Tetris Games This disk contains 6 flavors of the classic game "Tetris." Some have artificial intelligence, others a variety of play-styles/skill levels/number of players.
TSP12: ClipArt This disk contains several excellent bitmapped images for use in Desktop Publishing or similar programs.
TSP11: Operation Desert Storm: This is a complete Hyperbook-type application that will take you through a guided tour of the recent conflict in The Gulf.
TSP10: Fractals Scenery (pictured) will create realistic fractal landscapes. Genesis allows the creation of various landscapes with user-definable levels of complexity. Also included are various Mandelbrot generators, including TMandel, Mandel-Mountains and FracGen.
TSP9: Utilities #1 IconMeister—an Icon editor with a complete set of editing/painting tools. TJFormat—a disk formatting program that will format disks that AmigaDOS wont. ChartMaster—a graphing tool that allows you to generate and save different graphs in IFF format. Graph3D lets you visualize complex data in 3-D and save the results. StructGen lets you create gadgets, text, bitmaps and window structures and the program will automagically write the "C" source code for you. LabelMaker is a very easy to use, full featured label printer. DoublePrint fascilitates printing of text files on both sides of paper.
TSP8: Clipart Black & White and colorful clipart for a variety of needs including desktop publishing/video. People, holiday related, school items, scrolls, food, monsters, fish, lobsters, symbols and lots more.
TSP7: 3D Vector Objects #2 Books, Early American telephone, barrels, gun, spaceships, lamps, trombone, bugle, skateboard, Lego-Rover, remote control, glider and airplane. All objects in Sculpt format.
TSP6: 3D Vector Objects #1 Lamp, mirror, bed, chair, fire hydrant, lamp post, street lamp, street sign, traffic light, cannon, cannon supplies, rose, fork, spoon, knife and plate. All objects in Sculpt format.
TSP5: Games 3 CrossCircuit is a one or two-player action/logic game that requires fast reflexes. WordSearch will allow you to generate your own word-search puzzles. In DrugBusters you rid the streets of cigarettes, alcohol, pills and needles. In Cinco you try to get five X's in a row before your opponent. ColorLogic is an excellent MasterMind type game.
TSP4: Games 2 Dyno-Wars—a strategic checker-style game. Kooties—assemble a bug before the computer beats you to it. BlockBuster is a colorful, well done Tetris-type game. Warrior is a fun shoot'em-up adventure game. MicroMan is a graphic maze game played with a joystick. Battle the computer's armies to take over the planet in Circe.
TSP3: Games 1 Crystal Caverns is an adventure game with randomly generated worlds--you'll never trash the same world twice! Dot2Dot is an adaptation of the classic 2-player connect-the-dot game. PizzaDeliveryMan has you running through the streets to get those pies to your customers. TinyBall is the world's smallest baseball game. Surround-Cycles is a high-speed arcade game, based on the light cycle races from the Disney movie Tron.
TSP2: Sounds Animal sounds, musical instruments and many, many more—43 sound samples in all!
TSP1: Maps of USA, Canada and Europe Hi-Res IFF brushes of all 50 US States, 10 Canadian Provinces and countries in Europe. Each map has a 3D extrusion effect with cast shadow.

SPECIAL EDITION TOOLCHEST

RK1: MegaBall - This disk contains the full-release version of MegaBall, complete with the level editor to create your own challenging worlds to conquer. This game is quite similar to Arkanoid and allows two players with stereo sound and 5 soundtracks! Special RK price, $14.95.
RK2: MachIII - This remarkable utility will allow you to record any mouse click or keypress and play it back as a macro at any time, inside any program. Also provides memory info/clock, alarm, screen blanker, mouse accelerator, mouse-to-menu, sunmouse and window cycling. Special RK price $14.95.

TC34AB: Optimizer will permanently speedup your hard-drive or floppy disks. LCD Calc is a nice full-screen calculator. BBaseII is a useful database program. FixDisk will correct many problems with disks. BizCalc is a loan analyser. Interferon is a Tetris-type game. Nebula is a 3D space game. PicBase will allow you to track all the IFF images you have. Hate is a great Zaxxon clone.

TC33AB: Measures 1.0 is an incredibly useful utility that will convert any type of measurement to another. DiskLabeler is a database designed for storing and printing 3." disk labels. Jewels is a Tetris-esque game of action and strategy. Switch is a fun board-game. Gfxclipper will allow you to grab any screen and save it as an IFF picture. Softball Manager is a database for storing stats for softball—any number of leagues may be tracked. WBExec allows you to execute CLI commands from within the Workbench. Several Clipart images are also included.
TC32AB: Computer Coloring Book is a delightful program for children of all ages—comes with 15 pages of pictures to color again and again. Listmaker lets you make, edit, combine and print lists of words—great for those spelling tests! Moresmooth! scrolls text files smoothly on the screen and allows easy printing. Pocket Billiards lets you choose from several of the most popular pool games with realistic action. Texture allows you to create, manipulate and save (in standard IFF format) realistic fractal textured surfaces. Plague is a monster maze game. Also includes Screen Fader, Snowbench, and FlipBench.
TC31AB: Calendar Publisher is a professional-caliber calendar maker that is customizable. CrossCircuit is a 1 or 2 player action/logic game that calls for fast reflexes and thinking. APR is a much-needed printer utility. Pizza Delivery Man is a maze game where you deliver pies in your neighborhood. Multiplayer is a single program that will let you see IFF pictures/brushes or playback IFF sound samples. Also includes RAMgauge, 3-D vector objects and Hi-Res IFF brushes of maps and flags of European countries.
TC26AB: Word Search Maker lets you create word-search puzzles. TimeCalc is useful for anyone who has to calculate hours and minutes (great for adding up times of CD's to make tapes!) Drugbusters is a fun game where you get rid of cigarettes, booze, pills and needles. Wordfinder lets you search binary or text files for a particular word or string (good for getting hints in your adventure games!). KeyClick will add a small audible click to your keys and MouseClick will do the same for the mouse buttons. Seawar is a game between the Allied Navy and the Empire Fleet. Plus Early American 3-D vector objects, digitized sound effects, and a directory program.
TC25AB: ScreenToIFF captures your screen to an IFF file. PopColors lets you change the colors of your Workbench screen. Warrior is a fun shoot'em-up/adventure game for one or two players. Kaleidoscope is a line drawing program. Blockbusters is a game where you get rid of blocks by pushing matching blocks into them. Amidemo will show-off your Amigas ability to do solid-polygon animations. Microscope lets you examine memory at any location. Also includes Hi-Res IFF brushes of all 50 states and 10 Canadian provinces, nine digitized sounds and two small disk utilities and printer utility.
TC24AB: TableMaker is a tool for effortlessly building numerical tables. Kooties is a fun game where you have to assemble a bug before the computer beats you to it. HyperText lets you put links in a text file to other text, graphics, sound, animation, ARexx and other applications. The Little Black Book is a wonderfully useful telephone and address book. Color Logic is a MasterMind-type game. Also includes several disk and memory utilities—-and some animal sound effects to top it off.
TC23AB: WhereIs lets you quickly and painlessly find a misplaced file on your drive. Select creates a window from which you can run your favorite programs. MatheMagic lets you find the day of the week for any date in the century, also lets you enter statistical data to be analyzed, graphs data, and solves linear algebraic equations. Pointer List Maker lets you create your own pointers or import pointers from other programs and save them in a disk file. Dyno-Wars requires more strategy and thought than your regular checker board game. Also includes Mr. Monster and Trilion games, 3-D objects, six sound effects and an animation of a pretzel.
TC22AB: Amiga Checkbook is a fast checkbook manager with check printing ability, budget analysis, and a report writer. AmiCrypt is a file encryption/decryption tool to password-protect any file...a must for security. WaveSyn lets you design musica instruments and waveforms for use in other programs. It also lets you play your key board like a piano. Cinco is a game where you try to get five X's in a row before you opponent does. AlterCLI lets you change attributes of your CLI window (width, title depth, height, location, colors) with a single command—very useful for scripts. Also includes an animation by renowned Amiga-artist Lou Markoya, as well as 3-D objects
TC21AB: Circe is a "risk-style" game where you battle the computer to take over the planet. Batchman allows you to execute CLI programs, batch files and ARexx scripts by simply clicking on a gadget. Colors prints color test sheets and assigns RGB values to printer and screen output....absolutely invaluable to achieve the best color printing results. Easyfile is a powerful database for home or a small business. Sprite Editor lets you easily create animated sprites. Plus 3-D fruit objects and five sampled sounds
TC16AB: Cyberscape generates complex 3-D vector objects of terrain and saves you objects in Sculpt or Turbo-Silver format. Mathplotter graphs mathematical equations in both 2-D and 3-D. Double Print prints your text files on both sides of the paper Metamorph, a graphic adventure game, Tinyball—the worlds smallest baseball arcade game and 6 digitized sound effects.



AmigaPlot featured on TSP14

TC15AB: Labelmaker is a very easy to use label program. SurroundCycles, a high speed arcade game. Dot2Dot, an adaptation of the classical connect-the-dot game. A tutorial on animation techniques by Amiga-artist extrordinaire Brad Schenck complete with one of his animations. Also includes a collection of clip-art and more animal sounds.
TC14AB: AmigoFile is a database and address book. Graph 3-D lets you visualize complex data in a 3-D manner and save the results. Spectrogram analyzes and displays digitized sounds. Pteronadonaball—an animation by Lou Markoya. Also includes 3-D Tic Tac Toe, 3-D objects, food clip-art, and sampled sounds
TC13AB: StrucGen lets you create gadget, text, bitmap, and window structures and writes the C source code for you. LifeCycles plots your biorhythms. Create spectacular images with Mandelbrots. Look, a CLI utility that helps you find files on your disk quickly and easily. Plus 3-D objects, holiday clip-art, an Amiga Flight animation, drive head cleaning utility, and technical discussion on how AmigaDOS stores information on disk.
TC12: TJFormat formats disks that AmigaDOS normally wont. ChartMaster is a powerful graphing tool. MoreCandy generates an assortment of colorful graphic patterns and allows you to save them to disk. Shark, a game where you have to eat all the little perch you can catch to stay alive. Plus B&W clip-art, spaceship 3-D vector objects, an animation, and Speakeasy (C source code for the programmer to add speech to C programs).
TC11: DiskSalvage will fix corrupted disks and recover deleted files. IconMeister is an advanced Icon editor. AlienDuel is a fast, shoot'em-up game. Crystal Caverns is a colorful, graphic adventure game like the arcade game. Also includes an animation sound samples, 3D dinner table objects, and Hi-Res monster clip-art.

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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Going for the Gold

Commodore's Gold Service is probably the best warranty of any computer maker out there today. You get parts and labor free for one year, and they will come to your house or place of business (again, free!) to fix your machine. My chance to test it out came when I was having trouble reformatting and installing my system software to my hard drive. I called Commodore Express and talked to a guy named Terry, and he thought I had a controller problem. The next day, the service man was at my door with a new motherboard and hard drive, and he fixed the entire thing for nothing! It makes you feel really good when a computer company will go through all of this to keep you as a happy customer.

John W. Sullivan
Port Huron, Michigan

The Case of the Missing Monitors

Regarding the monitor article "Screen Tests" (June, p. 39), while it is true that CBM's 1960 is a recent release, it *is* on the market, costs less than the 1950, and has been selling for a while. Why was there no mention of it at all? Furthermore, NEC released its FG series of monitors to replace the D series way back in November of 1991. I find it difficult to believe there was not enough time to review them. A friend I work with could no longer get a 4D or 5D from the suppliers he called. Also, it would have been good to see coverage of more monitors in the article.

Charles Birkner
Greensboro, North Carolina

Super, Supra!

After using my SupraDrive for a few months, the drive didn't spin up one day. Supra's tech support told me they would have to see for themselves, so I should ship it out to them. Even though it was still under warranty, I feared this would probably turn into an expensive repair. Much to my surprise, in a few days I received a UPS package from Supra containing a brand-new drive—at no expense to me. What I thought would be an ordeal turned out to be a week-long minor inconvenience, so I sing the praises of Supra Corporation for a job well done.

Pierre Fontaine
Hastings-on-Hudson, New York

The Sad Success

I have had my system since 1986. It now consists of an original A1000, an external 3.5-inch floppy, a Quantum 40MB hard drive with a Commodore autoboot controller with 2MB of RAM on a SCSI interface. This was all bought, not because of CBM's marketing, but in spite of it. Commodore's idea of marketing has always been "We've got the best damn machine for the money, so we'll just wait for people to come flocking to our door." Well, guys, it ain't gonna happen by itself.

Yes, Virginia, there *is* a home/small-business market for low-cost computers like the Amiga!

As a professional programmer/analyst, I marvel at the capabilities of this machine that performs with less than one megabyte what OS2 and Windows can't do properly with eight! I gnash my teeth whenever I get yet another UAE in MS-Windows or wait 20 minutes for a FreeLance drawing to print from OS2. I throw up my hands in disgust as I read columns by people who make their living telling us how to make Windows/OS2 run the way they were supposed to in the first place, and tell us in the same breath how user-friendly they are. Commodore did it right. It's too bad so few people know this.

R.J. de Graff
Winnipeg, Manitoba

Texture in Context

For the most part, I have found *AmigaWorld* to be both informative and accurate. However, in the article "Art in an Instant" (July, p. 34), the assessment of one product was a bit off. Geoffrey Williams stated that Pro Textures' "...images are useful, but look somewhat washed out." I was confused by this statement until I realized that Mr. Williams claims *not* to be an artist, and therefore he may not have understood the proper use of these textures.

In the first place, the images are not a collection of backgrounds, and if used as such, they may indeed look "washed out" compared to a "background" package. But when used to map objects in a 3-D program, as intended, the textures add life to your renderings. They are rich in both color and depth, and show a great sense of imagination. There are few products on the market that I use as faithfully as Pro Textures.

Rayvon Hartzog
Sydney, Florida

A500 Power Discovery

I just made a momentous discovery. My Amiga 500, which I had always thought to be somewhat slow and limited...is not! All that it needed was a hard drive. What a difference that makes on your perception of how fast a computer is and whether it's worth the money.

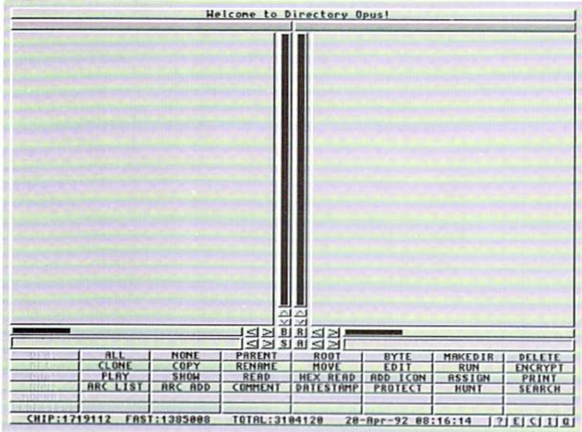
Commodore will *never* succeed in selling an A500 without a hard drive against any machine that has one. But CBM could team up with Great Valley Products and make a killing. It would be an unbeatable price/performance combination. Yes, Virginia, there *is* a home/small-business market for low-cost computers like the Amiga!

Mike Robinson
Scottsdale, Arizona

Is your directory utility dull, weak, and generally unpleasant?

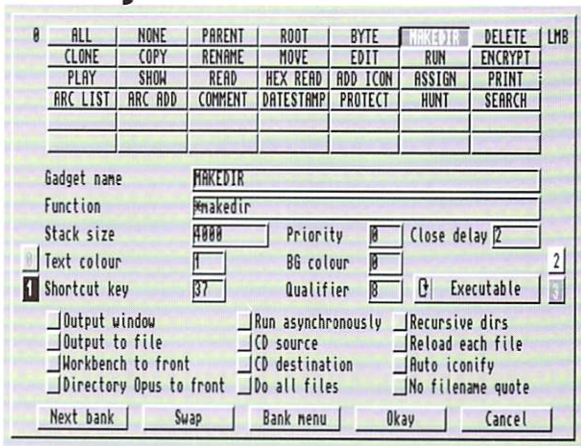
Do Something About It!

You start out with this...



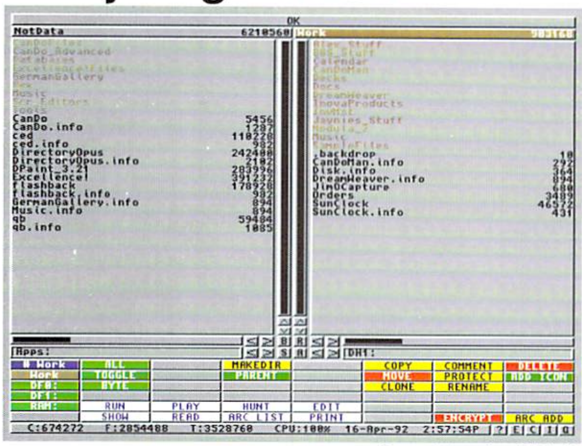
default configuration

then you use this...



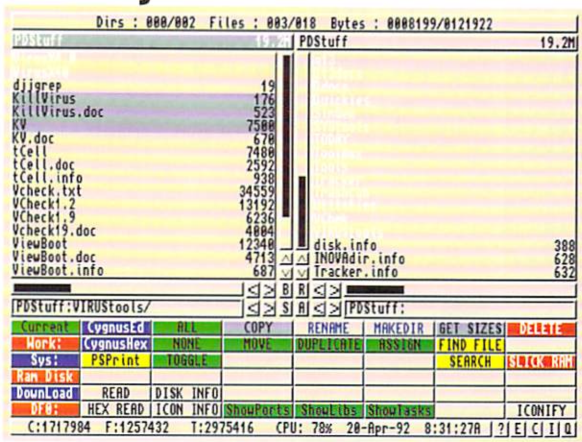
gadget config screen

and you get this...



One Man's OPUS

or maybe this...



Another Man's OPUS

But only if you have this:

directory OPUS

version 3.41

from

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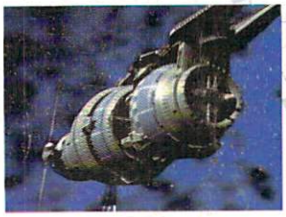
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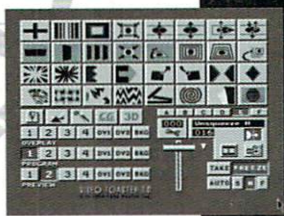


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